Service Manual

LCD Monitor 2209WA

Service Manual Versions and Revision

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1	1.0	2008/10/17	Initial Release

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Dell 2209WA Service Manual

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Chapter 1- PRECAUTIONS & SAFETY NOTICES

SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper used or installation may cause damage to the monitor as well as to the user.

WARNINGS:

- This monitor should be operated only at the correct power sources indicated on the rating label on the rear cover of the monitor. If you're unsure the power supply in your residence, consult your local dealer or Power Company.
- Use only the specified power cord that comes with this monitor.
- Do not try to repair the monitor by yourself, as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a lean, cool, dry environment. If it gets wet, unplug the power cable immediately and consult your closed dealer.
- Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the class screen.
- Do not place heavy objects on the monitor or power cord.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts, which do not have the same safety characteristics as specified in the parts list, may create shock, fire, or other hazards.

SERVICE NOTES

- When replacing parts on circuit boards, clamp the solder wires around terminals before soldering.
- Keep wires away from high voltage, high temperature components and sharp edges.
- Keep wires in their original position so as to reduce interference.
- Adjustment of this product please refers to the user' manual.
- Use Pb free solder wire for circuit board preparation.

Chapter 2- SERVICE TOOLS & EQUIPMENT REQUIRED

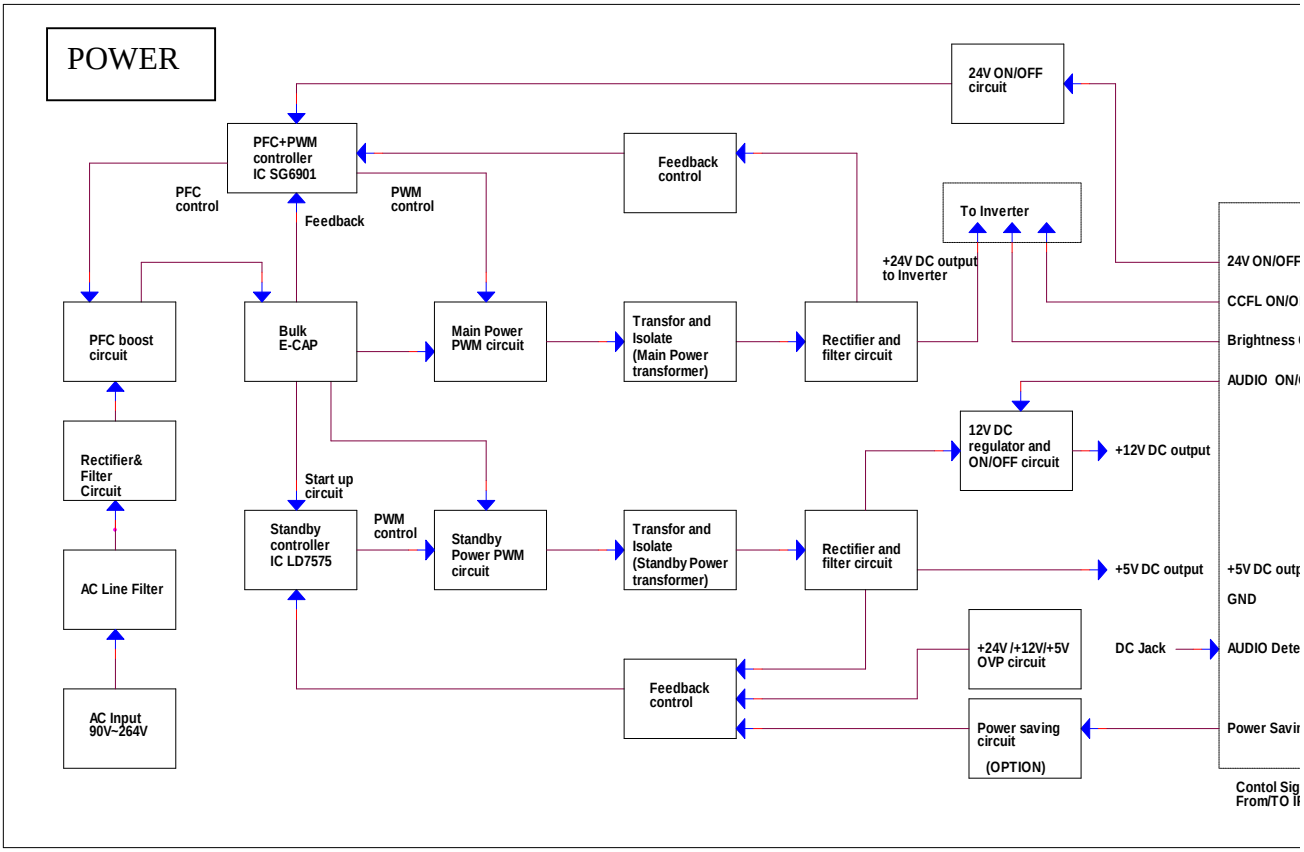
1. SIGNAL GENERATOR
2. MULTIMETER
3. SCREW DRIVER
4. OSCILLOSCOPE
5. Soldering IRON
6. SOLDER (Lead free, RoHS compliance)
7. Color Analyzer
8. Fox_VISP_Programmer
9. Fox_VEDID_Programmer

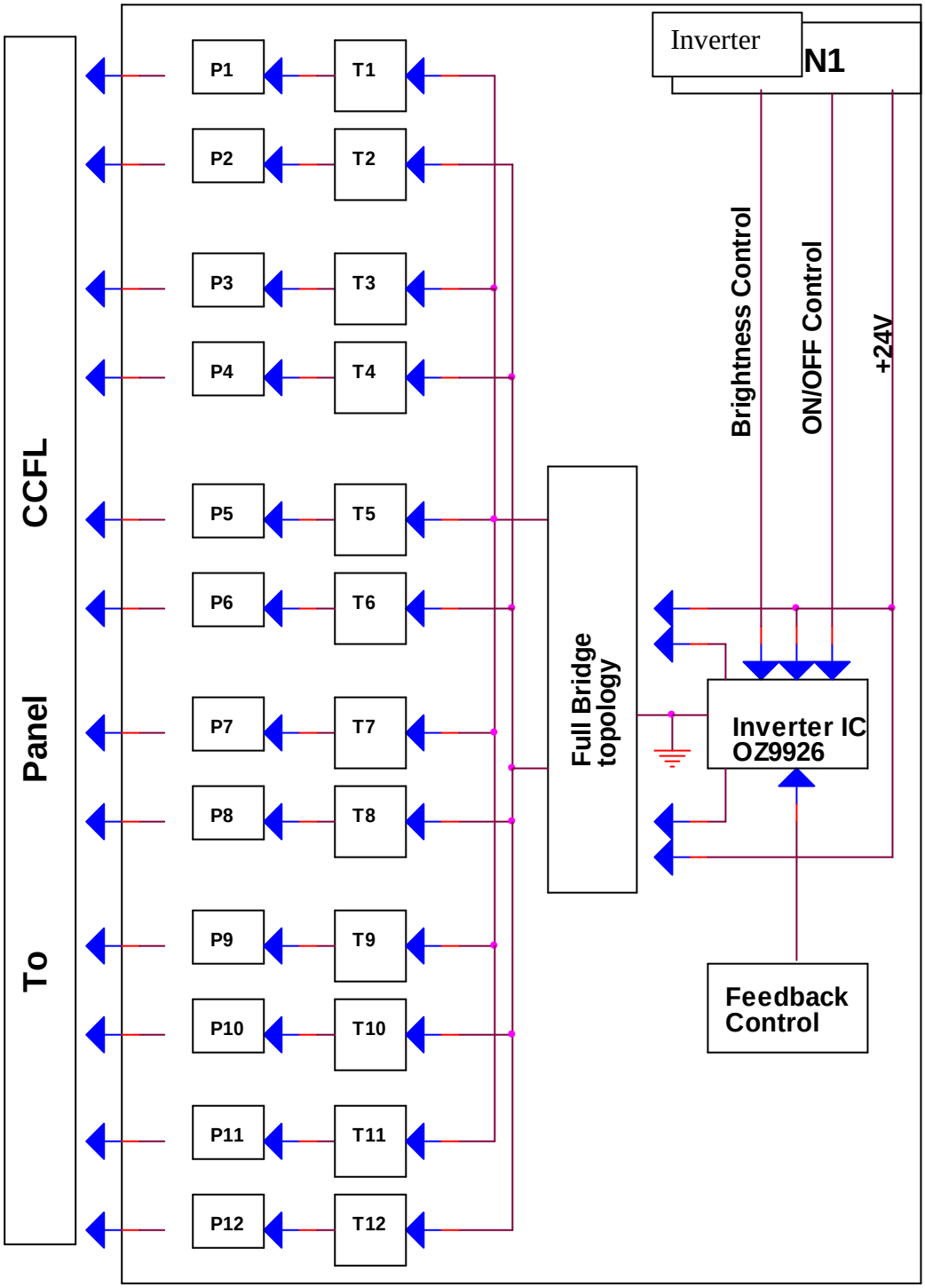
Chapter 3- CIRCUIT THEORY

Block Diagram

Dell 2209WA consists of a main body and a stand (base). The main body contains a Innolux LCD module with 6 CCFL lamps, There are 4pcs PCBA in this monitor, one is power & interface & Audio board , one is invert board , one is keypad which is OSD control, and one is USB stretch board located on the right side back cover.. The block diagram is shown as below.

(fig.1)




Inverter
N1
To CCFL Panel
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
Full Bridge topology
Brightness Control
ON/OFF Control
+24V
Inverter IC OZ9926
Feedback Control

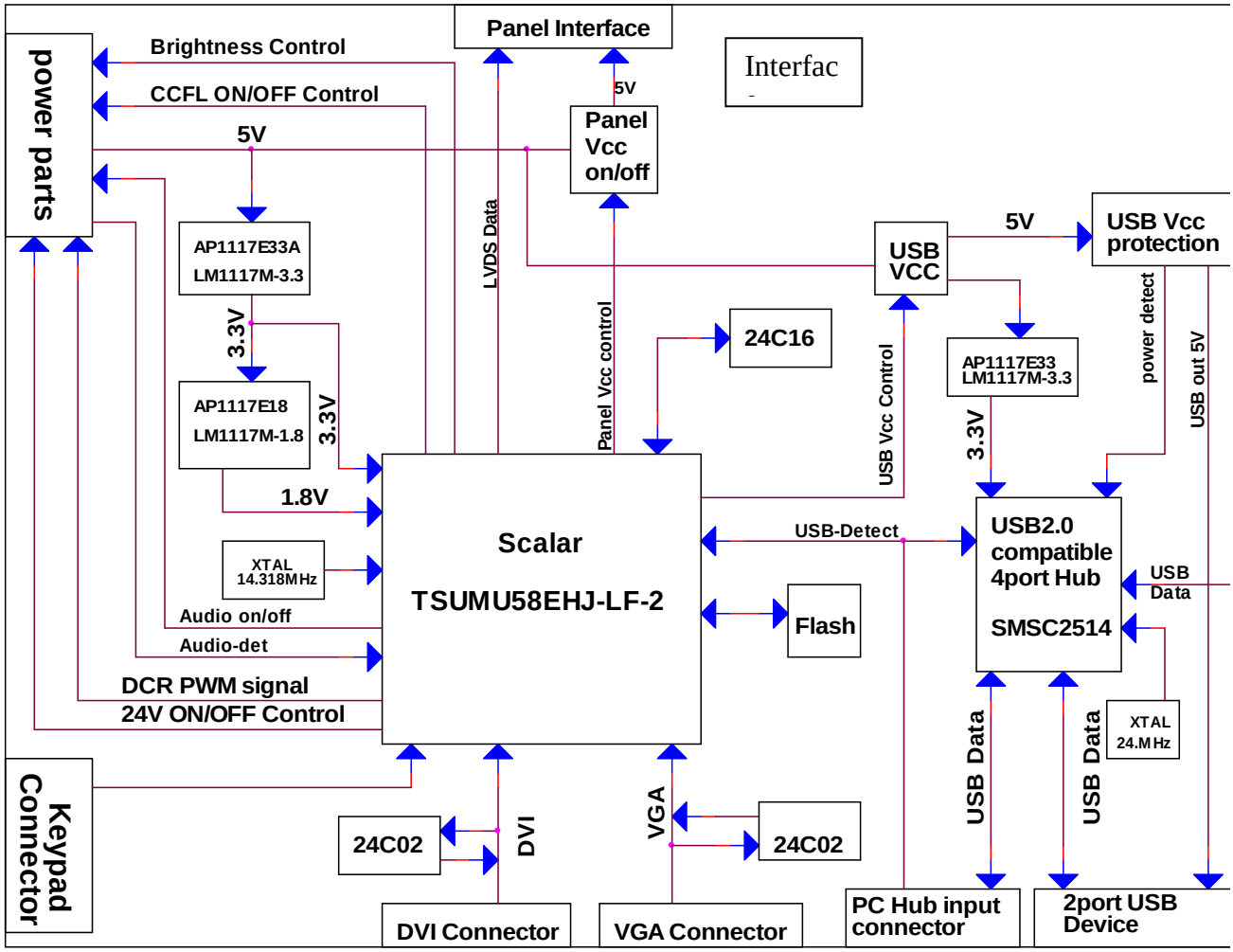

Panel Interface
Interfac
power parts
Brightness Control
CCFL ON/OFF Control
5V
Panel Vcc on/off
5V
AP1117E33A LM1117M-3.3
3.3V
AP1117E18 LM1117M-1.8
3.3V
1.8V
XTAL 14.318MHz
Audio on/off
Audio-det
DCR PWM signal
24V ON/OFF Control
LVDS Data
Panel Vcc control
24C16
USB VCC
5V
USB Vcc protection
USB Vcc Control
AP1117E33 LM1117M-3.3
3.3V
power detect
USB out 5V
Scalar
TSUMU58EHJ-LF-2
USB-Detect
Flash
USB2.0 compatible 4port Hub
SMSC2514
USB Data
XTAL 24.MHz
USB Data
USB Data
Keypad Connector
24C02
DVI
VGA
24C02
DVI Connector
VGA Connector
PC Hub input connector
2port USB Device

Fig.1

Electronic Circuit Theory

2.1 Inverter PWM circuit

2.1.1)**Inverter Control circuit:(fig.2)**

4.1

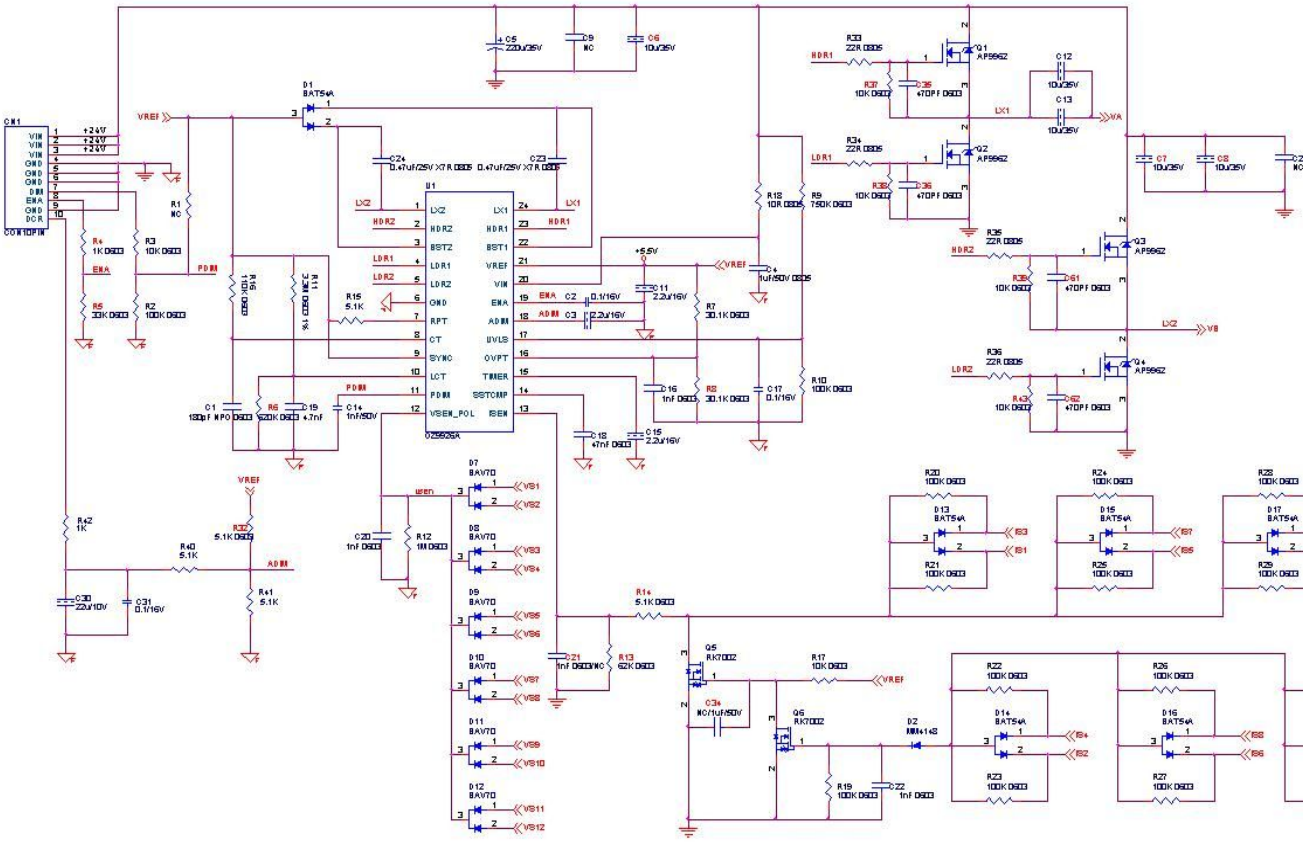


Fig.2

ON/OFF voltage signal coming from IF BD will enable U1 to work.C2 is used to dump noise.

During the striking period, if the voltage at VSEN_POL(pin12) reaches a threshold of approximately 2.85V, the transformer output voltage will be regulated until the striking timer expires.

During normal operation, if the voltage at VSEN_POL(pin12) reaches the present voltage at OVPT(pin16), the sink and source current of SSTCMP(pin14) will stop and the TIMER(pin15) will be charged. Once TIMER(pin15) expires and the abnormal condition still exists, U1 will shutdown and latch.

Once the IC is enabled, when the voltage at VREF(pin21) rises to approximately 4.0V, before the transformer output is present, and voltage at

pin VSEN_POL(pin12) is greater than approximately 1.5V, the PWM dimming polarity will be negative. A voltage range of approximately 0.1V to greater than 1.5V to PDIM(pin11) results in minimum and maximum brightness respectively.

The striking and operating frequency is determined by the external resistor (R16) and capacitor(C1) connected to Pin8(CT).

LX1, HDR1 and LX2, HDR2 of U1 are used to drive Q1, Q2 and Q3,Q4 . LX1, HDR1 and LX2, HDR2 are controlled by build-in PWM IC. Q1, Q 2 and Q3, Q4 are switches that everyone has a build-in IGBTs.

ISEN(pin13)

For lamp “ON” detection, if the peak voltage at ISEN(pin13) is less than approximately 0.8*ADJ and the voltage at VSEN_POL(pin12) is greater than the preset voltage at OVPT(pin16), this indicates the lamp has not been ignited.

During soft-start (lamp striking mode), if the voltage at ISEN(pin13) is greater than approximately 0.8*ADJ and the voltage at VSEN_POL(pin12) is less than the preset voltage at OVPT(pin16), this indicates lamp “ON” condition. The striking period will end and the IC will switch to the normal operation mode.

Once the IC switches to the normal operation mode, ISEN becomes(pin13) the feedback signal input pin for the current regulation loop.

ADIM(pin18) Reference voltage for analog dimming

The ADIM is used to deal with the signal of DCR from IF BD. U1 can adjust the CCFL current automatically based on the DCR signal.

Clamped between 0.52V and 2.45V, ADIM is passed into OZ9926A as ADJ.

ADJ is the positive input signal to the internal OTA used for current regulation. Thus, ADJ controls the lamp current amplitude. ADJ also set one of the lamp “ON” condition, Which is 0.8*ADJ.

2.1.2)Output Circuit and Protection Circuit:(fig.3)

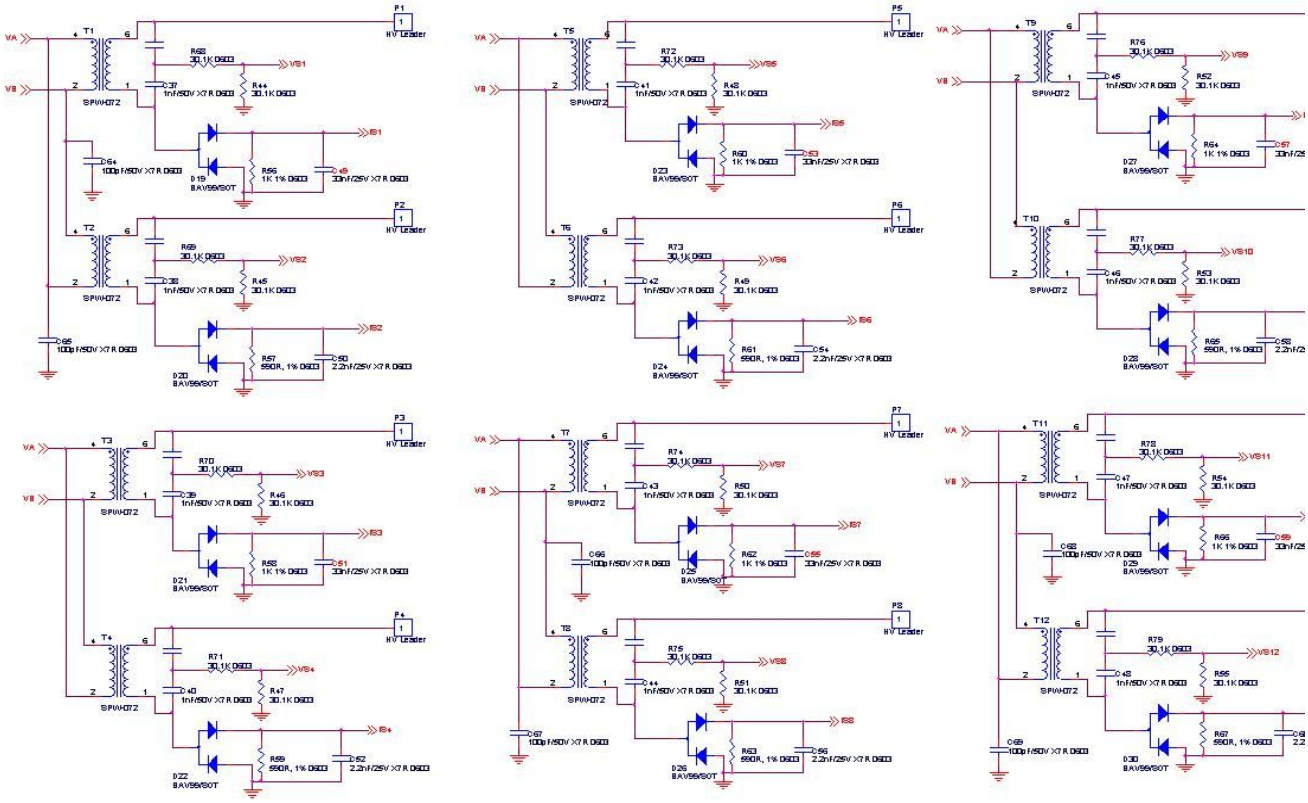


Fig.3

The transformer (T1 to T12) secondary winding leakage inductance and output capacitances that are in the inverter PCB board, forms a lower pass filter, which converts the square-wave driving signal into a sinusoidal output voltage signal for CCFL.

The voltage signal sensed through R14 comes to Pin13 of U1-ISEN (Lamp Current Detection & Control). The CCFL current is detected through R14 and reaches a regulated value. The CCFL current detected at resistor R13 and R14 is converted to a voltage level and input to the ISEN pin. Once the voltage at the ISEN pin reaches the lamp on threshold, the IC switches from the striking mode to the normal operation mode and the PWM dimming control is activated.

C21 is used to dump noise. Once the CCFLs are ignited and current is sensed through resistor R14 ,capacitor C15 performs the loop compensation function. The voltage at pin1, pin2, pin23 and pin24 controls the drive duty cycle of the power MOSFETs to regulate the CCFL current.

Q5 off and Q6 on during normal operation. Once any one of ISs falls down, gate of Q6 lost voltage, Q6 turns off and Q5 turns on, ISEN would be pulled

down to 0 voltage. IC shutdown process is triggered

2.2 Power PWM circuit

2.2.1) Block diagram:(fig.4)

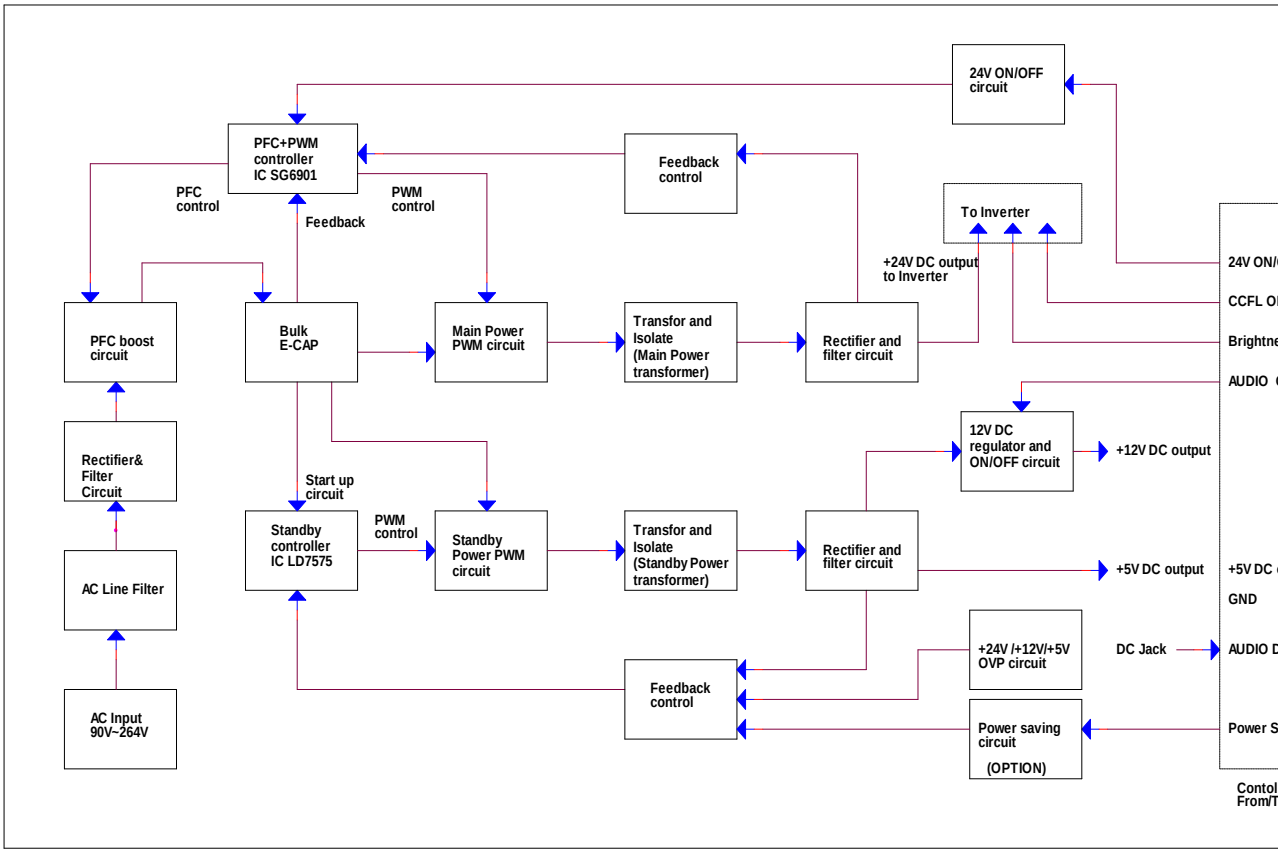


Fig.4

2.2.2) AC Input and EMI Filter:(fig.5)

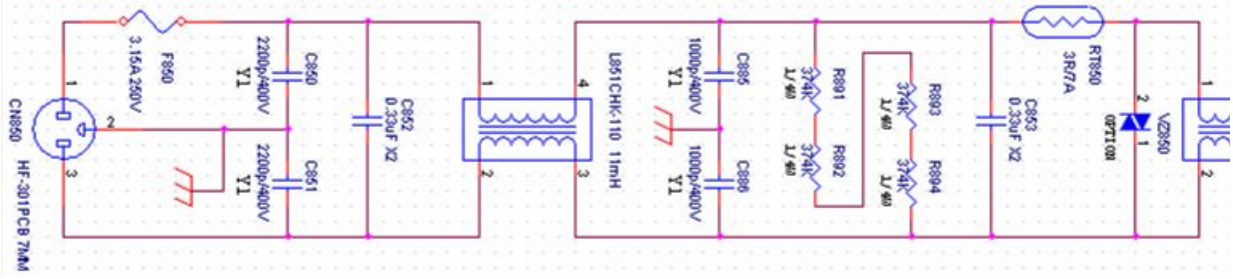


Fig.5

CN850 is a connector for connecting AC Power. F850 is a fuse to protect all the circuit .AC Input voltage is from 90V to 264V. R891, R892, R893 and R894 are joined between two inputting main circuit to discharge electric energy to prevent man from shock. L851 and L852 are common mode chock to filter EMI common mode noise. C850 , C851 and C885,C886 Y-CAP, and C852 & C853 are X-CAP used for reduce EMI noise.

2.2.3)High Voltage to Low Voltage Control Circuit:(fig.6)

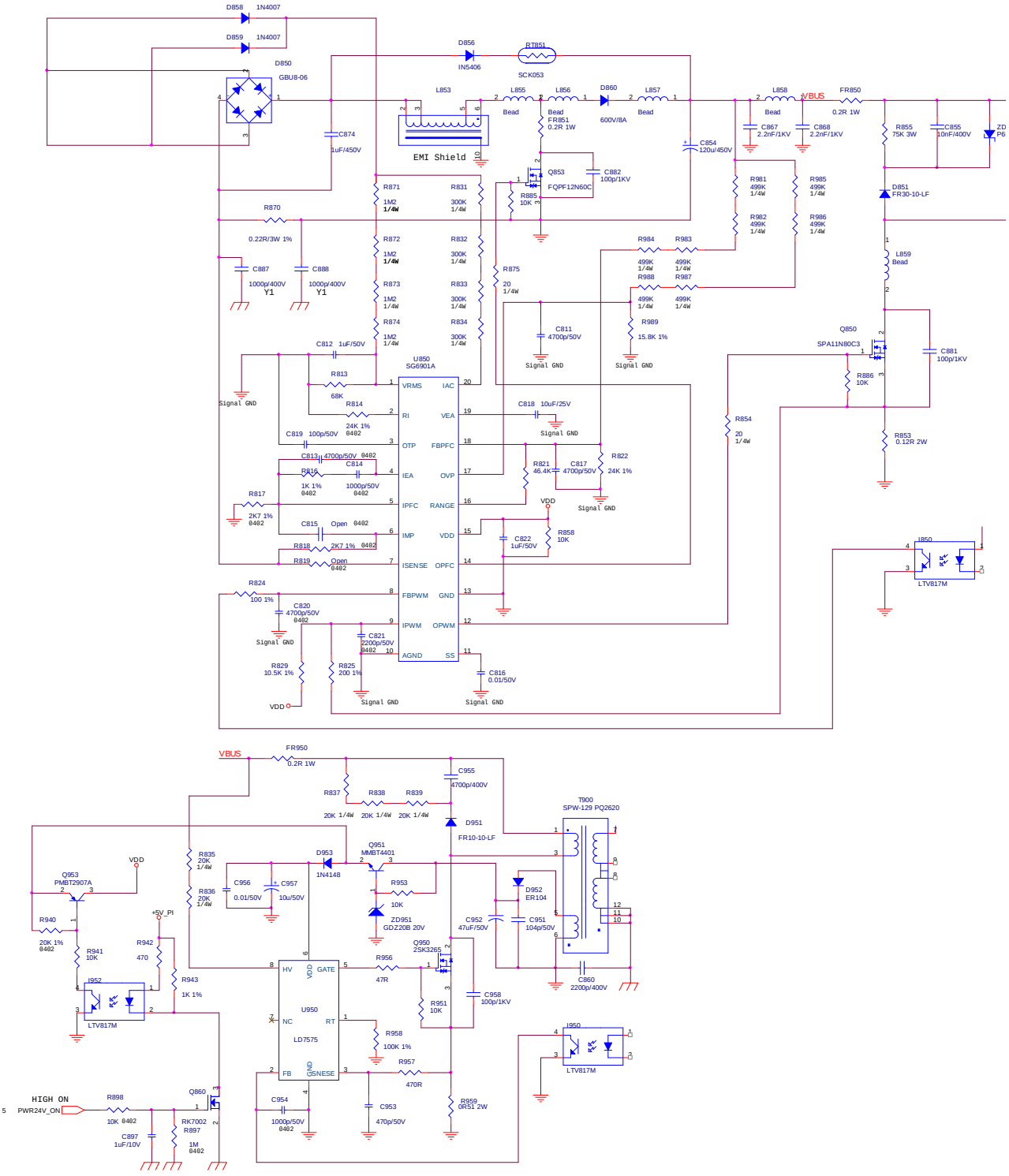


Fig.6

D850 is a rectifier in which there are 4 build-in diodes, inverting AC to DC.

C854 is used to smooth the wave from rectifier. R870 is PFC current sense Resistor. FR850,FR851,FR950 are fuse resistors to protect the

following circuit when inrush current is too large.

U950 (LD7575) is a current-mode PWM controller with excellent power-saving operation, It features a high-voltage current source to directly supply the startup current from bulk capacitor and further to provide lossless startup circuit. Max start-up current for U950 (LD7575) is 100 uA, When current flow from the bulk capacitor C854 through R835 and R836 gets to HV pin to start up U950 (LD7575), Meanwhile, the VDD supply current is as low as 100 uA thus most of the HV current is utilized to change the VDD capacitor C952, Whenever the VDD voltage is higher than UVLO (16V),the GATE pin will output signal to drive the power MOSFET(Q950), the high-voltage current source is off and the supply current is provided from the auxiliary winding of the transformer PIN5.

When U950 begins to operate Pin5 of U950 (LD7575) will output square wave to drive Q950, then the main current flow get to GND bypassing through T850, Q950. Because of the change of current flow, wires in the other side of T900 will induct current. In the same time, the current inducted by wires which connected T900 Pin 1 and Pin 3, with components of D952, Q951, D953, C951 and C952, will be supplied to U950 for normal operating.

The typical current mode PWM controller feedbacks both current signal and voltage signal to close the control loop and achieve ragulation.U950 detects the Q950 current from Isense pin which max voltage is set as 0.85V, then the Q950 current can be calculated as: I peak=0.85V/R959,When the sense voltage across the sense resistor R959, reaches the threshold voltage over 0.85V, the output GATE drive will be turned off. R957 and C953 is used to avoid the Isense pin damaged by the negative turn-on spike.

The voltage feedback signal is provided from the TL431 (I951) through the I950 to the COMP pin. When the voltage on COMP pin is lower than 1.2V, the IC will turn off.

When Q950 is turned off, the main current flow will be consumed through D951, C955, R837, R838, and R839, This will prevent Q950 from being damaged under large current impulse and voltage spike.

RT pin is to program the switching frequency, By connecting R958 to ground to set the switching frequency, f =(65.0/R958)*100(KHz).

When current flow from the Diode D858 and D859 through R871, R872, R873, R874 and R831, R832,

R833, R834 gets to VRMS and IAC pin to start up U850, Meanwhile, the VDD supply current is as low as

100 uA thus most of the HV current is utilized to change the VDD capacitor R858, C822.For normal operation, this input is use to provide current reference for the multiplier

RI pin is to program the switching frequency, By connecting R814 to ground to set the switching frequency, f =(1560/R814kohm) (KHz)=1560/24KHz=65KHz.

PFC output voltage control. For an universal input (90VAC~264VAC) power supply applying active boost PFC and Fly-back as a second stage, the output voltage of PFC is usually designed around 250V at low line while it is 380V at high line. This is to improve efficiency for low-line input. In U850 (SG6901A), the RANGE pin is used for the two-level output voltage setting. The RANGE output is shorted to ground when the Vrms voltage exceeds 1.95V while it is of high impedance whenever the Vrms voltage drops below 1.6V. The output voltage can be designed using below equation .

Range=Open Voutput =〔(R981+R982+R983+R984+R822)/R821〕*3V

Range=Ground Voutput =〔(R981+R982+R983+R984)+(R822// R821)/ (R822// R821)〕*3V

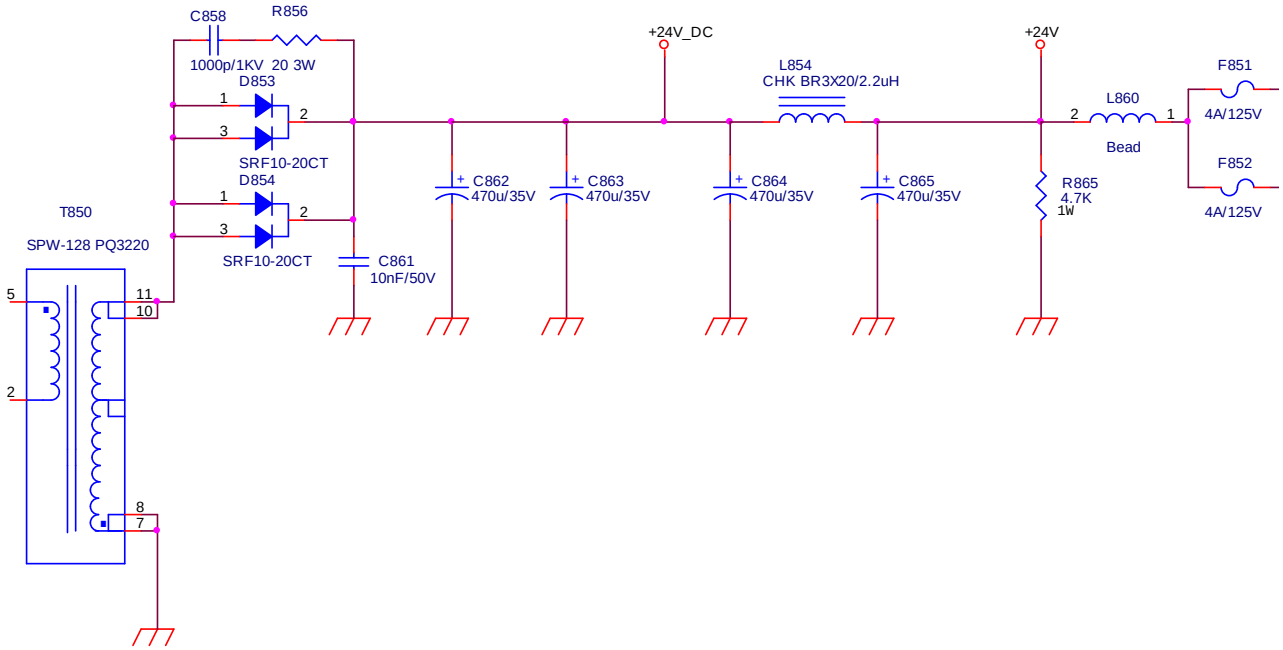
PFC Over-voltage Protection. When the OVP feedback voltage exceeds the over-voltage threshold, the U850 will inhibit the PFC power converter form operating abnormally while the FBPFC pin is open.

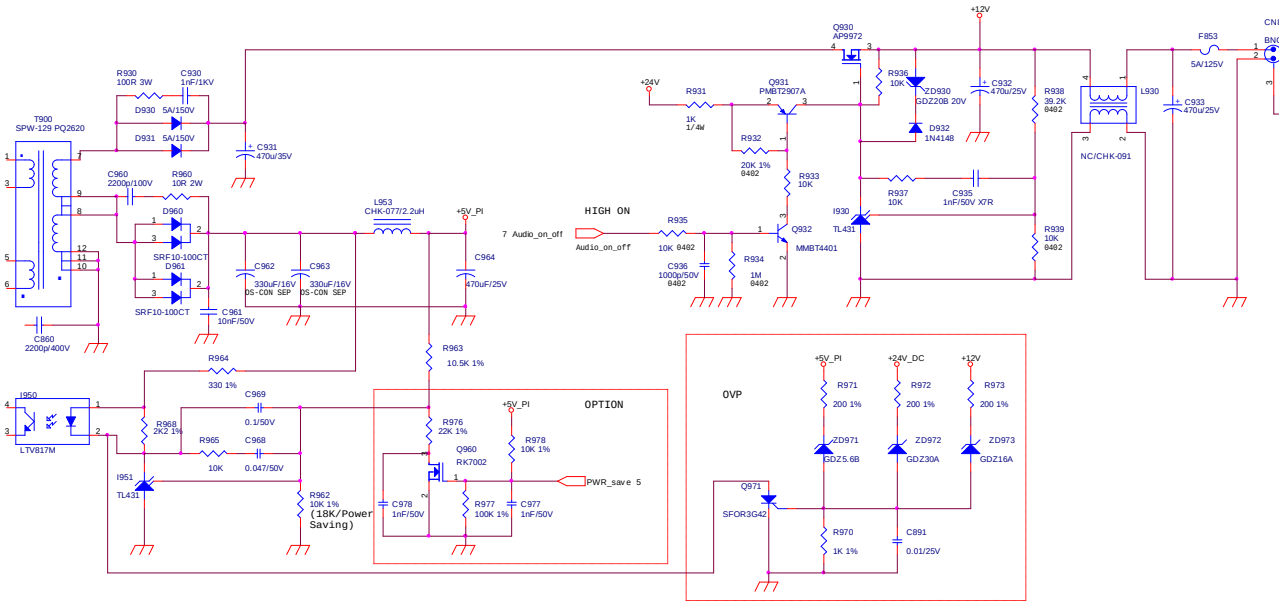
U850 provides an OTP pin for over-temperature protection. A constant current is output from this pin. When the OTP voltage drops below 1.2V, U850 (SG6901A) will be disable. Until OTP voltage exceeds 1.4V.During startup of PWM stage, the SS pin will charge an external capacitor C816 with a constant current source.U850 (SG6901A) output stage is a fast totem-pole gate driver. The output driver is clamped by an internal 18V Zener diode in order to protect the power MOSFET.

As shown in Fig.7, peak-current-mode control is utilized for Flyback PWM. The U850 (SG6901A) inserts a synchronized 0.5V ramp at the beginning of each switching cycle. When the IPWM voltage, across the sense resistor, reaches the threshold voltage, 0.65V or 0.7A selected by RANGE, the OPWM will be turned off after a small propagation delay Tpd-pwm. When RANGE is shorted to GND, the PFC output voltage is high and the corresponding threshold is 0.65V. When RANGE is opened, the PFC output voltage is low and the corresponding threshold is 0.7V.

When VDD is lower than the turn-off threshold such as 10V, U850 (SG6901A) will be totally shut down. Due to the start up resistor, VDD will be charged up to the turn-on threshold voltage 12V until U850 is enable again. If the over loading condition still exists, the protection will take place repeatedly. This will prevent the power supply from being overheated under loading condition.

2.2.4)DC_24V ,DC 12V and DC 5V Output Circuit and Feedback circuit:(fig.7)





B

Fig.7

A

D853 and D854 is used to rectify the inducted current. R856 and C858 form the snubber circuit for restrain peak voltage of Schottky Diode D853 and D854.The parts including C861, C862,C863,C864,C865,R865, and L853,L860 are used to smooth the current waves that are from D853 and D854, then 24V voltage is supplied.

DC 24V supply voltage feed back to PWM controller U850 via, R878, R860,C871, I851,R864,C872,
R863R859, Used to control the voltage feedback loop.

B

D930 & D931 is used to rectify the inducted current. R930 and C930 are used to store energy when current is reversed. The parts including C931, C932 , Q930,C933 and L930 are used to smooth the current waves that are from D930 & D931, then 12V voltage is supplied.

DC 12V supply voltage feed back to PWM controller U950 via, R938, R937, C935, I930, R939,
And Q930 Parts, Used to control the voltage feedback loop.

D960 & D961is a Schottky diode used to rectify the inducted current.C960 and R961 form the snubber circuit for restrain peak voltage of Schottky Diode

D960 & D961, The components including C961,C962,C963,L953 and C964 are used to smooth the current waves, then DC+5V voltage is supplied.

DC 5V supply voltage feed back to PWM controller U950 via, R964,R968,R963,C969,R965,C968 I951,R962 Used to control the voltage feedback loop.

R970,R971,R972,R973,C891and ZD971,ZD972,ZD973, Q971 form a combined OVP circuit.

2.2.5) Audio Power output:(fig.8)

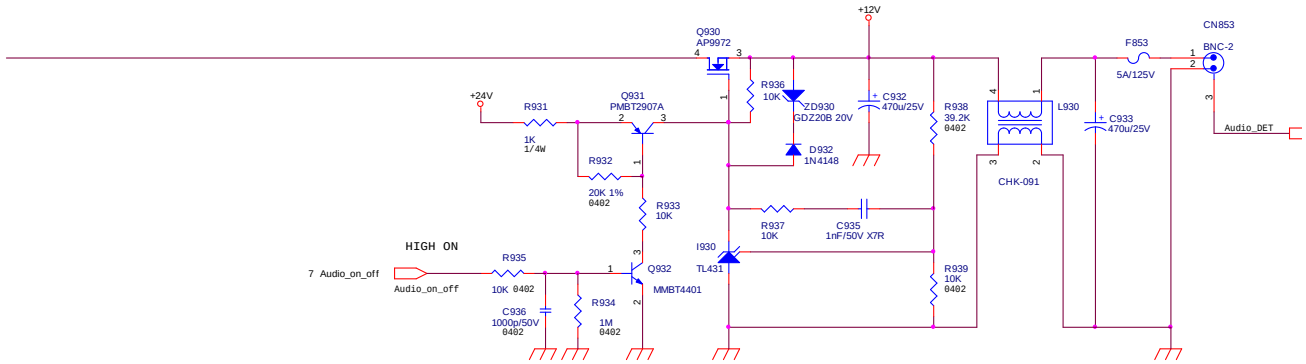


Fig.8

12V audio power is come from linear voltage drop circuit , with output on/off control circuit.

L930 use for reduce EMI conduct noise. F853 is used for OCP for the LPS test.

2.3 I/F Board Circuit (see the Attachment 2- Schematic)

2.3.1 RGB CAPTURE

- Signal RED,GREEN,BLUE input through CN102 #1,#2,#3, Stop DC via C113, C114 and C115, and then enter into U105 (TSUMU58EHJ-LF) analog input PIN #28,#25,#23, and then TSUMU58EHJ-LF deals with signal internally. D103, D104, D105 are ESD protector to prevent U105 from ESD.
- Signal DDC_SCL (series clock) inputs via CN102#15, and then passes through ZD106 for ESD protection, goes into EDID EEPROM IC U103 #6.
- Signal DDC_SDA (series data) inputs via CN102#12, and then passes through ZD103 for ESD protection, goes into EDID EEPROM IC U103 #5.
- Signal TTL vertical sync. (Vsync) inputs via CN102 #14, and then clamped by ZD105 Zener, passes through R116, and then goes into IC U105

(TSUMU58EHJ-LF) #33.

- Signal TTL horizontal sync. (Hsync) inputs via CN101 #13, and then clamped by ZD104 Zener, passes through R115, and then goes into IC U105 (TSUMU58EHJ-LF) #32.
- CN102#5 is defined as cable detect pin ,the detect pin can create a pull-low signal send to U105#36pin via R160 to identity cable connection, if plug out the VGA cable the U105#36pin will receive a high signal and system enter self test mode when exit factory mode (the device must set at VGA input mode) .
- U103 is an EEPROM IC which is memory and EDID data saved in it,the IC power is supplied by PC via CN102#9 with D106 and ZD102 for ESD protection, or supplied by Monitor self via D106.

2.3.2 DVI CAPTURE

- Differential Signal input RX0+,RX0-,RX1+,RX1-,RX2+,RX2-,RXC+,RXC- through CN201 #18,#17,#10,#9,#2,#1,#23,#24 via R206,R205,R204,R203,R202,R201,R208,R207 enter into U105 (TSUMU58EHJ-LF) Digital input terminal #15,#16,#12,#13,#9,#10,#18,#19, and then TSUMU58EHJ-LF-LF deals with signal internally. D202, D203, D204, D205, D206, D207, D208, D209 are ESD protector to prevent U105 from ESD
- Signal DDC_SCL (series clock) inputs via CN201#6, and then passes through ZD204 Zener for ESD protection, via R209, goes into EDID EEPROM IC U201 #6.
- Signal DDC_SDA (series data) inputs via CN201#7, and then passes through ZD203 Zener for ESD protection, via R210, goes into EDID EEPROM IC U201 #5.
- CN201#15 is defined as cable detect pin, the detect pin can create a pull-low signal send to U105#49pin via R216 to identity cable connection, if plug out the DVI cable the U105#49pin will receive a high signal and system enter self test mode when exit factory mode (the device must set at DVI input mode) .
- U201 is an EEPROM IC which is memory and DVI input EDID data saved in it ,the U201 power is supplied by PC via CN201#14 through D201, or supplied by Monitor self via D201..

2.3.3 Buttons Control

- Button “Power” on right corner of front bezel connects to U105 (TSUMU58EHJ-LF) #4 through CN104 #8 and R125, U105 #4 is defined as power on/off.
- Button “+” on right corner of front bezel connects to U105 (TSUMU58EHJ-LF) #120 through CN104 #2and R154, U105#120 is defined as “Plus”.
- Button “-” on right corner of front bezel connects to U105 (TSUMU58EHJ-LF) #121 through CN104 #3 and R155, U105 #121 is defined as “Minus”.
- Button “Menu” on right corner of front bezel connects to U105 (TSUMU58EHJ-LF) #50 through CN104 #1and R153, U105 #50 is defined as “Menu”.
- Button “SELECT” on right corner of front bezel connects to U105 (TSUMU58EHJ-LF) #122 through CN104 #4, U105 #122 is defined as “SELECT”.

- LED Indicator on Front Bezel
  a. When press button “power”, U105 (TSUMU58EHJ-LF) #123 be send in low Voltage, make Q107#3 sends out high Voltage to CN104#5 , and then to keypad, LED blue on.
  b. When in “Suspend” mode, U105 (TSUMU58EHJ-LF) #124 sends out a low Voltage, make Q108#3 sends out high Voltage to CN104#7 , and then to keypad, LED Amber on.

2.3.4 MAIN CHIP U105 (TSUMU58EHJ-LF**)**

- U105 (TSUMU58EHJ-LF) #86~#77 output 8 bit even and #100~#91 output 8 bit odd LVDS digital data to panel control circuit through CN103.
- U105 (TSUMU58EHJ-LF) #50 output ”H” potential to make Q104 conducted, and then make Q101 conducted, +5V flow to CN103#1~#3 as Panel Vdd .
- U105 (TSUMU58EHJ-LF) #109 output CCFL_ON/OFF ”H” potential to control Inverter on/off.
- U105 (TSUMU58EHJ-LF) #110 output ”H” potential to control Inverter power on/off.
- U105 (TSUMU58EHJ-LF) #125 outputs Brightness “PWM” signals to control CCFL brightness.
- TCLK by Crystal 14.318MHz input to U105 (TSUMU58EHJ-LF) #128.
- U105(TSUMU58EHJ-LF) #108 is RESET signals input pin

Please refer to TSUMU58EHJ-LF Pin Assignments table in page

2.3.5 Regulator Circuit

- +5V is from switching power supply .
- +3.3V is generated from Regulator U101 which is supplied by+5V via R101 and through C101 filtering, C102 and C105 is 3.3V which supplies toU102、U106、U103、U201、U105、U108output filtering.
- +1.8V is generated from Regulator U102 which is supplied byU101-3.3V through C106 filtering.TheU102 output1.8V via FB105 send to U105.

3. FACTORY PRESET TIMING TABLE

Standard	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
VESA	640 x 480	31.469	59.940
	640 x 480	37.500	75.000
	800 x 600	37.879	60.317
	800 x 600	46.875	75.000
	1024 x 768	48.363	60.004
	1024 x 768	60.023	75.029
	1152x864	67.500	75.000
	1280x1024	48.483	60.042
	1280x1024	60.087	75.034
	1680x1050	55.935	59.887

IBM DOS	720 x 400	31.469	70.087

4. Power On/Off Sequency

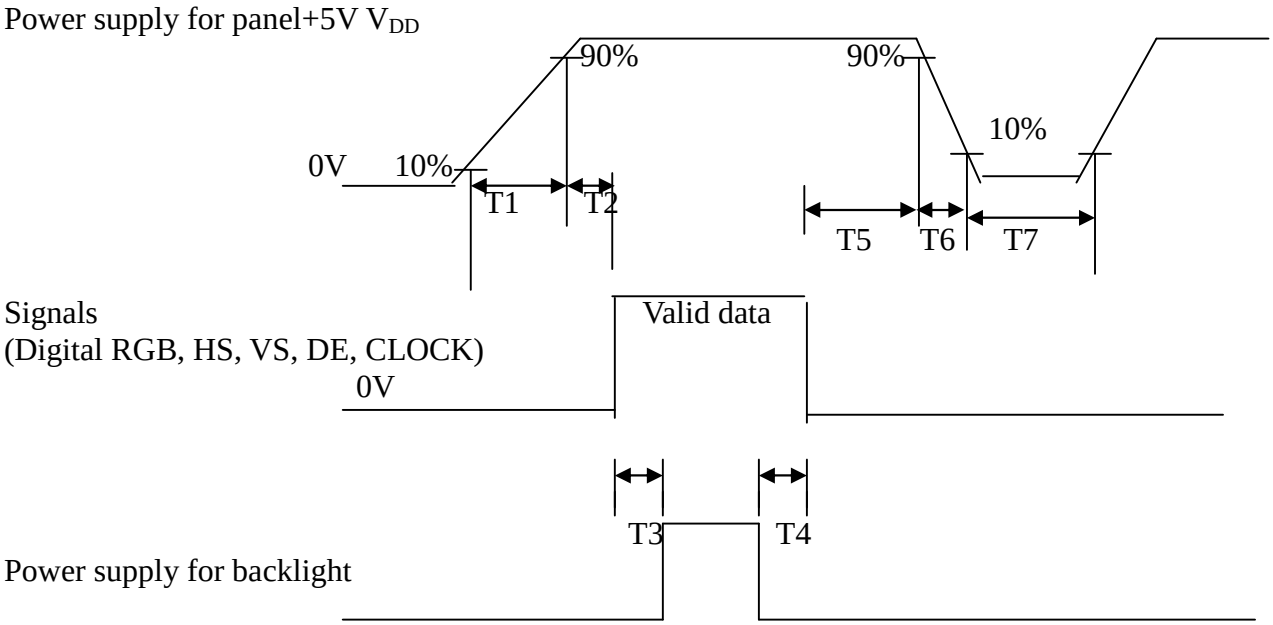
Hardware power On/Off

When power cord plug into AC socket, Power provides DC_5V to interface board.
DC_5V is main voltage for panel and Regulator U101.
DC_3.3V is coming from Regulator U101, DC_3.3v is main voltage for U105.
When DC_3.3V input to U105 and U105 reset circuit active, U105 all registers will be set to default, that means finish hardware power on.
When pull out power cord from AC socket,the system shut down instantly for no supply

Software power On/Off

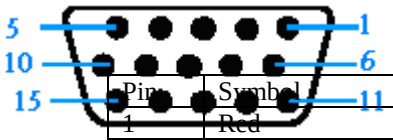
- When press power key, U105 #4 receives low pulse, then U105(TSUMU58EHJ-LF) will be wake up and send control signals(at 109,50pin) to on CCFL and switch 5.0v to panel module, at the same time,U105 make the VGA/DVI cable input signal source display normal on panel if the VGA/DVI cable input signal is active
- If power ON, U105 #123 (LED_blue) will send out low potential, and then LED blue on.
- If power saveing, U105 #124 (LED_Amber) will send out low potential, and then LED Amber on.
- If power ON or power saveing, when press power key, U105 #4 receives low pulse, then U105 will be sleeping and turn off backlight, at the same time, the panel will lose +5V.

The Panel_Vcc, Backlight_En, CLK/DATA output to panel will follow the following sequency.



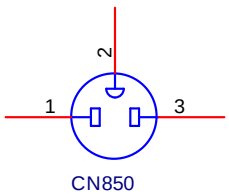
	T1(ms)	T2 (ms)	T3 (ms)	T4 (ms)	T5 (ms)	T6 (ms)	T7(ms)
SPEC(LGD)	0.3~10	0.0~50	>500	>100	0.0~50	NA	>1000

5. D-SUB Connector Pin Assignment



Pin	Symbol	Pin	Symbol	Pin	Symbol
1	Red	6	Red_GND	11	GND
2	Green	7	Green_GND	12	DDC_SDA
3	Blue	8	Blue_GND	13	Hsync
4	GND	9	PC+5V	14	Vsync
5	Cable Detect	10	GND	15	DDC_SCL

6. AC Outlet Pin Assignment



Pin	Symbol	Description
1	Line	
2	GND	
3	Neutral	

7. Inner Connector Pin Assignment

7.1 CN103 (Connect interface board to Panel,)

Pin	Symbol	Description
1	Panel_Vcc	Panel power supply (typ.5.0V)
2	Panel_Vcc	Panel power supply (typ. 5.0V)
3	Panel_Vcc	Panel power supply (typ. 5.0V)

4	NC	
5	NC	
6	NC	
7	GND_LVDS	LVDS Ground
8	RXE3+	LVDS signal of even channel 3(-)
9	RXE3-	LVDS signal of even channel 3(+)
10	RXEC+	LVDS signal of even channel clock (+)
11	RXEC-	LVDS signal of even channel clock (-)
12	RXE2+	LVDS signal of even channel 2(+)
13	RXE2-	LVDS signal of even channel 2(-)
14	GND_LVDS	LVDS Ground
15	RXE1+	LVDS signal of even channel 1(+)
16	RXE1-	LVDS signal of even channel 1(-)
17	GND_LVDS	LVDS Ground
18	RXE0+	LVDS signal of odd channel 0(+)
19	RXE0-	LVDS signal of odd channel 0(-)
20	RXO3+	LVDS signal of odd channel 3(+)
21	RXO3-	LVDS signal of odd channel 3(-)
22	RXOC+	LVDS signal of even channel clock (+)
23	RXOC-	LVDS signal of even channel clock (-)
24	GND_LVDS	LVDS Ground
25	RXO2+	LVDS signal of even channel 2(+)
26	RXO2-	LVDS signal of even channel 2(-)
27	RXO1+	LVDS signal of even channel 1(+)
28	RXO1-	LVDS signal of even channel 1(-)
29	RXO0+	LVDS signal of odd channel 0(+)
30	RXO0-	LVDS signal of odd channel 0(-)

7.2 CN1, CN2 (Connect to Panel Backlight,)

Pin	Symbol	Description
1	HV	High voltage for lamp
2	LV	Low voltage for lamp

7.3 CN104 (Connect to keypad, WAFER2*4P or compatible connector)

Pin	Symbol	Description
1	MENU	OSD “MENU” control
2	PLUS	OSD “PLUS” control and “Brightness”adjustable hot key
3	MINUS	OSD “MINUS” control
4	ENTER	OSD “ENTER/SELECT” control
5	LED_blue	LED blue on/off control
6	GND	Ground
7	LED_Amber	LED amber on/off control
8	POWER	OSD “POWER” control

8. Key Parts Pin Assignments

8.1 U105(TSUMU58EHJ-LF)

PIN DESCRIPTION

Analog Interface

Pin Name	Pin Type	Function	Pin
HSYNC0	Schmitt Trigger Input w/ 5V-tolerant	Analog HSYNC Input	32
VSYNC0	Schmitt Trigger Input w/ 5V-tolerant	Analog VSYNC Input	33
REFP		Internal ADC Top De-Coupling Pin	31
REFM		Internal ADC Bottom De-Coupling Pin	30
RIN0P	Analog Input	Analog Red Input	28
RIN0M	Analog Input	Reference Ground for Analog Red Input	27
SOGIN0	Analog Input	Sync-On-Green Input	26
GIN0P	Analog Input	Analog Green Input	25
GIN0M	Analog Input	Reference Ground for Analog Green Input	24
BIN0P	Analog Input	Analog Blue Input	23
BIN0M	Analog Input	Reference Ground for Analog Blue Input	22
REXT		External Resistor 390 ohm to AVDD_33	7

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DVI Interface

Pin Name	Pin Type	Function	Pin
RX0N	DVI Input	Negative DVI Input for Data Channel 0	16
RX0P	DVI Input	Positive DVI Input for Data Channel 0	15
RX1N	DVI Input	Negative DVI Input for Data Channel 1	13
RX1P	DVI Input	Positive DVI Input for Data Channel 1	12
RX2N	DVI Input	Negative DVI Input for Data Channel 2	10
RX2P	DVI Input	Positive DVI Input for Data Channel 2	9
RXCKN	DVI Input	Negative DVI Input for Clock Channel	19
RXCKP	DVI Input	Positive DVI Input for Clock Channel	18

Serial Flash Interface

Pin Name	Pin Type	Function	Pin
SDO	Input w/ 5V-tolerant	SPI Flash Serial Data Output	41
CSZ	Output	SPI Flash Chip Select	42
SCK	Output	SPI Flash Serial Clock	43
SDI	Output	SPI Flash Serial Data Input	44

LVDS Interface

Pin Name	Pin Type	Function	Pin
LVA0M	Output	LVDS A-Link Channel 0 Negative Data Output	86
LVA0P	Output	LVDS A-Link Channel 0 Positive Data Output	85
LVA1M	Output	LVDS A-Link Channel 1 Negative Data Output	84
LVA1P	Output	LVDS A-Link Channel 1 Positive Data Output	83
LVA2M	Output	LVDS A-Link Channel 2 Negative Data Output	82
LVA2P	Output	LVDS A-Link Channel 2 Positive Data Output	81
LVA3M	Output	LVDS A-Link Channel 3 Negative Data Output	78
LVA3P	Output	LVDS A-Link Channel 3 Positive Data Output	77
LVACKM	Output	LVDS A-Link Negative Clock Output	80
LVACKP	Output	LVDS A-Link Positive Clock Output	79
LVB0M	Output	LVDS B-Link Channel 0 Negative Data Output	100
LVB0P	Output	LVDS B-Link Channel 0 Positive Data Output	99
LVB1M	Output	LVDS B-Link Channel 1 Negative Data Output	98
LVB1P	Output	LVDS B-Link Channel 1 Positive Data Output	97
LVB2M	Output	LVDS B-Link Channel 2 Negative Data Output	96
LVB2P	Output	LVDS B-Link Channel 2 Positive Data Output	95
LVB3M	Output	LVDS B-Link Channel 3 Negative Data Output	92
LVB3P	Output	LVDS B-Link Channel 3 Positive Data Output	91
LVBCKM	Output	LVDS B-Link Negative Clock Output	94
LVBCKP	Output	LVDS B-Link Positive Clock Output	93

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GPIO Interface

Pin Name	Pin Type	Function	Pin
GPIO_P14 / PWM0	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	2
GPIO_P15	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	3
GPIO_P16	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	4
GPIO_P22 / PWM1	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	36
GPIO_P47-GPIO_P43	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	45-49
GPIO_P42	Input/Output	General Purpose Input/Output; 4mA driving strength	50
GPIO_P24 / PWM2	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	51

Internal Use Only

Pin Name	Pin Type	Function	Pin
GPIO_00-GPIO_02	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	55-57
GPIO_06	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	70
GPIO_P04 / PWM3	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	73
GPO_P42	Output	General Purpose Output; 4mA driving strength	75
GPO_P43	Output	General Purpose Output; 4mA driving strength	76
GPIO_P25 / PWM3	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	109
GPIO_P26 / PWM0	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	110
GPIO_P27 / PWM1	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	111
GPIO_07-GPIO_10	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	115-118
GPIO_P00 / SAR0	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	119
GPIO_P01 / SAR1	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	120
GPIO_P02 / SAR2	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	121
GPIO_P03 / SAR3	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	122
GPIO_P06	I/O w/ 5V-tolerant	General Purpose Input/Output; 6/12mA programmable driving strength	123
GPIO_P07	I/O w/ 5V-tolerant	General Purpose Input/Output; 6/12mA programmable driving strength	124
GPIO_P13 / PWM2	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	125

Note: Pin #49/50 and #75/76 cannot be used as GPIO/GPO concurrently. When using pin #49/50 as GPIO_P43/ GPIO_P42, pin #75/76 should be NC, and vice versa.

Misc. Interface

Pin Name	Pin Type	Function	Pin
BYPASS		For External Bypass Capacitor	102
VCTRL	Output	Regulator Control	103
RST	Input w/ 5V-tolerant	Chip Reset; High Reset	108
MODE	Input	Chip Configuration Input; 10K ohm pull-low for normal operation	37

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Pin Name	Pin Type	Function	Pin
DDCD_SDA	I/O w/ 5V-tolerant	DDC Data and HDCP Slave Serial Port Data for DVI Interface; 4mA driving strength	5
DDCD_SCL	Input w/ 5V-tolerant	DDC Clock and HDCP Slave Serial Port Clock for DVI Interface	6
DDCA_SDA / RS232_TX	I/O w/ 5V-tolerant	DDC Data for Analog Interface / UART Transmitter / General Purpose Input/Output; 4mA driving strength	34
DDCA_SCL / RS232_RX	I/O w/ 5V-tolerant	DDC Clock for Analog Interface / UART Receiver / General Purpose Input/Output; 4mA driving strength	35
I2C_MDA / GPIO_P11	I/O w/ 5V-tolerant	I2C Master Data / General Purpose Input/Output; 4mA driving strength	38
I2C_MCL / GPIO_P10	I/O w/ 5V-tolerant	I2C Master Clock / General Purpose Input/Output; 4mA driving strength	39
XIN	Crystal Oscillator Input	Xin	128
XOUT	Crystal Oscillator Output	Xout	127

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Power Pins

Pin Name	Pin Type	Function	Pin
AVDD_33	3.3V Power	Analog Power	8, 14, 20
AVDD_18	1.8V Power	Analog Power	21
VDDP	3.3V Power	Digital Output Power	40, 58, 59, 71, 87, 107, 114
VDDC	1.8V Power	Digital Core Power	53, 74, 104, 126
GND	Ground	Ground	1, 11, 17, 29, 52, 62, 63, 68, 69, 72, 88, 101, 105, 106, 113

No Connects

Pin Name	Pin Type	Function	Pin
NC		No Connect. Leave These Pins Floating.	54, 60, 61, 64-67, 89, 90, 112

8.2 U108 (Serial Flash)

Pin	Symbol	I/O	Description
1	CE#	I	The device is enabled by a high to low transition on CE#. CE# must remain low for the duration of any command sequence.
2	SO	I/O	To transfer commands, addresses, or data serially into the device.
3	WP#	I/O	The write protect (WP#) pin is used to enable/disable BPL bit in the status register.
4	VSS	G	Connect ground

5	SI	I/O	To transfer commands, addresses, or data serially into the device input are latched on the rising edge of the serial clock.
6	SCK	I/O	To provide the timing of serial interface. Commands, addresses, or input data are latched on the rising edge of the clock input, while output data is shifted out on the Falling edge of the clock input.
7	HOLD	I/O	To temporarily stop serial communication with SPI flash memory without resetting the device.
8	VDD	P	To provide power supply.

8.3 U950 (LD7575, stand by Power Controller)

Pin	Symbol	I/O	Description
1	RT		This pin is to program the switching frequency
2	COMP	I	Voltage feedback pin,By connecting a photo-coupler to close the control loop and achieve the regulation
3	CS	I	Current sence pin
4	GND		
5	OUT	O	PWM output ,Gate drive output to drive the external MOSFET
6	VCC	I	Power supply
7	NC		Unconnected pin
8	HV	I	PWM output

8.4 U1 (INL836, CCFL Inverter controller IC)

Pin	Symbol	I/O	Description
1	SST_CMP	I	Enable, soft start time and compensation of current error amplifier
2	RT	I	Timing capacitor to set operating frequency
3	GNDA		Ground
4	DRV2	O	N MOSFET Driver output
5	DRV1	O	N MOSFET Driver output
6	VDDA	I	Supply voltage input
7	VSEN_DIM	I	Voltage sense, input analog signal for PWM driving control
8	ISEN	I	Lamp current detection & control

8.5 U850 (SG6901 Main Power controller IC)

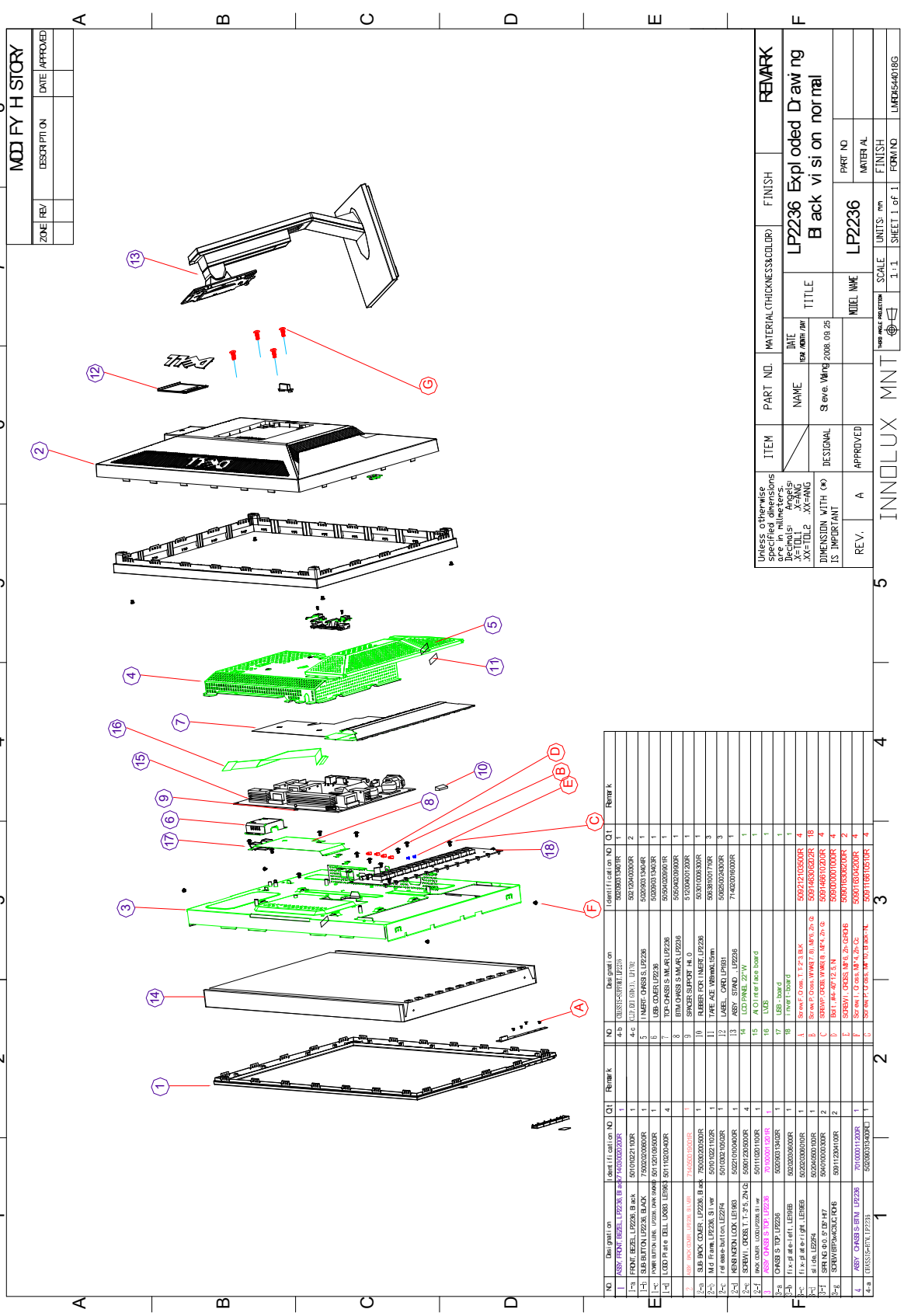
PIN DESCRIPTIONS

Name	Pin No.	Type	Function
VRMS	1	Line-Voltage Detection	Line voltage detection. The pin is used for PFC multiplier, RANGE control of PF voltage, brownout protection .For brownout protection, the controller will be after a delay time when the VRMS voltage drops below a threshold.
RI	2	Oscillator Setting	Reference setting. One resistor connected between RI and ground determ switching frequency. The switching frequency is equal to [1560 / RI] kHz, wher kΩ. For example, if RI is equal to 24kΩ, then the switching frequency will be 65
OTP	3	Over Temperature Protection	This pin supplies an over temperature protection signal. A constant current is o this pin. An external NTC thermistor must be connected from this pin to gr impedance of the NTC thermistor decreases whenever the temperature increa the voltage of the OTP pin drops below the OTP threshold, the SG6901A will b
IEA	4	Output for PFC Current Amplifier	This is the output of the PFC current amplifier. The signal from this pin will be c with an internal saw-tooth and hence determine the pulse width for PFC gate d
IPFC	5	Inverting Input for PFC Current Amplifier	The inverting input of the PFC current amplifier. Proper external compensatio will result in excellent input power factor via average-current-mode control.
IMP	6	Non-inverting Input for PFC Current Amplifier	The non-inverting input of the PFC current amplifier and also the output of Proper external compensation circuits will result in excellent input power f average- current- mode control.
ISENSE	7	Peak Current Limit Setting for PFC	The peak-current setting for PFC.
FBPWM	8	PWM Feedback Input	The control input for voltage-loop feedback of PWM stage. It is internally pu through a 6.5 kΩ resistance. Usually an external opto-coupler from secondary circuit is connected to this pin.
IPWM	9	PWM Current Sense	The current-sense input for the Flyback PWM. Via a current sense resisto provides the control input for peak-current-mode control and cycle-by-cycl limiting.
AGND	10	Ground	Signal Ground
SS	11	PWM Soft Start	During startup, the SS pin will charge an external capacitor with a 50uA constant current source. The voltage on FBPWM will be clamped by SS during the event of a protection condition occurring and/or PWM being disabled, the be quickly discharged.
OPWM	12	PWM Gate Drive	The totem-pole output drive for the Flyback PWM MOSFET. This pin is clamped under 18V to protect the MOSFET.
PGND	13	Ground	Power Ground
OPFC	14	PFC Gate Drive	The totem-pole output drive for the PFC MOSFET. This pin is internally clamp 18V to protect the MOSFET.
VDD	15	Supply	The power supply pin.
RANGE	16	PFC Output-voltage Control	Two level output voltage setting for PFC. The PFC output voltage at low lin reduced to improve efficiency. The RANGE pin has high impedance whe VRMS voltage is lower than a threshold.
OVP	17	PFC Over Voltage Input	The PFC stage over voltage input. The comparator will disable the PFC output voltage at this input exceeds a threshold. This pin can be connected to FBPFC connected to the PFC boost output through a divider network.
FBPFC	18	Voltage Feedback Input for PFC	The feedback input for PFC voltage loop. The inverting input of PFC error amp is connected to the PFC output through a divider network.
VEA	19	Error-Amp Output for PFC voltage feedback loop	The error-amp output for PFC voltage feedback loop. A compensation network capacitor) is connected between this pin and ground. A large capacitor value wi a narrow bandwidth and hence improve the power factor.
IAC	20	Input AC Current	Before start-up, this input is used to provide startup current for VDD. Fo operation, this input is used to provide current reference for the multiplier.

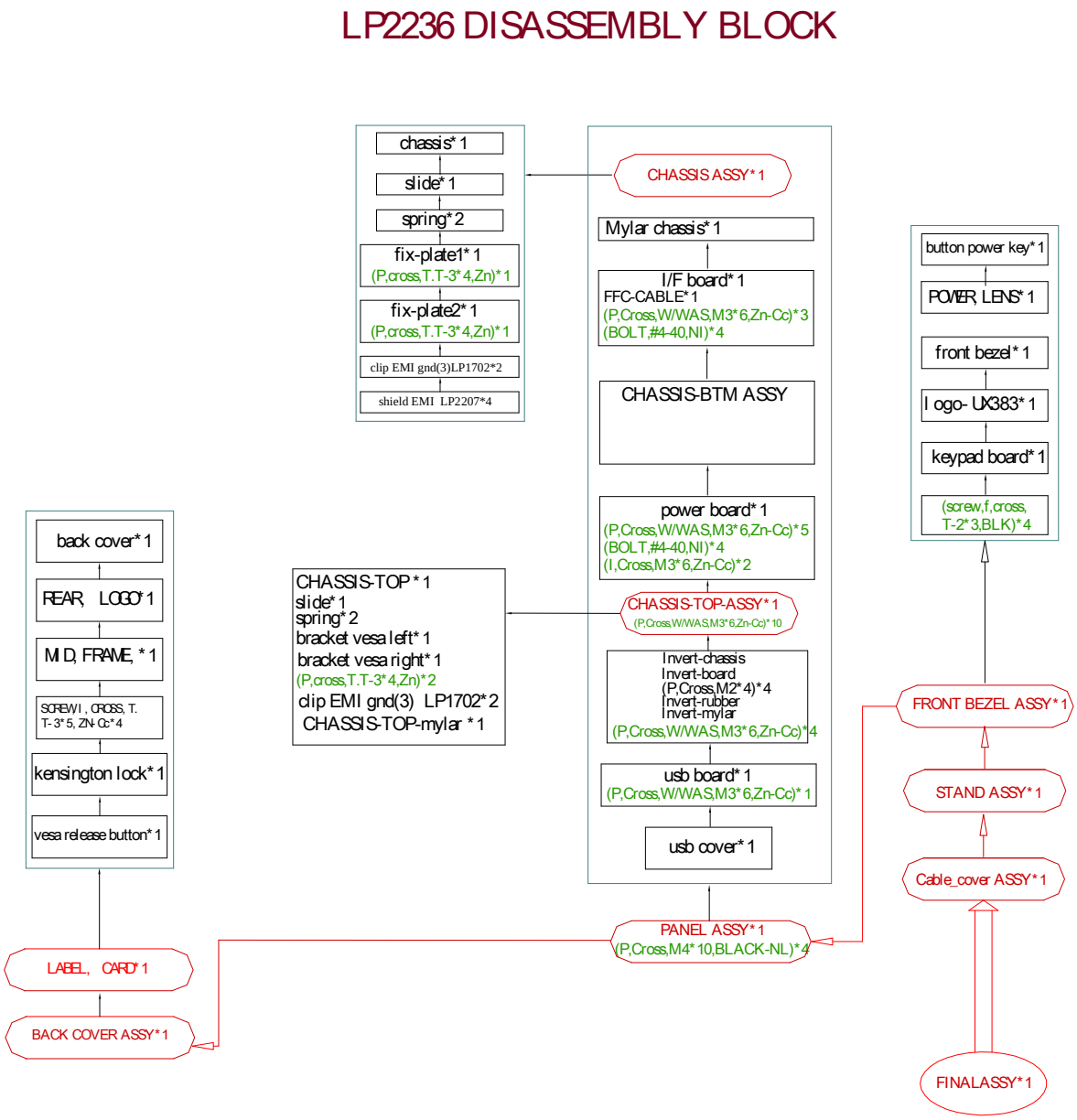
PRELIMINARY

Chapter 4- Disassembly & Assembly

1. Exploded Diagram

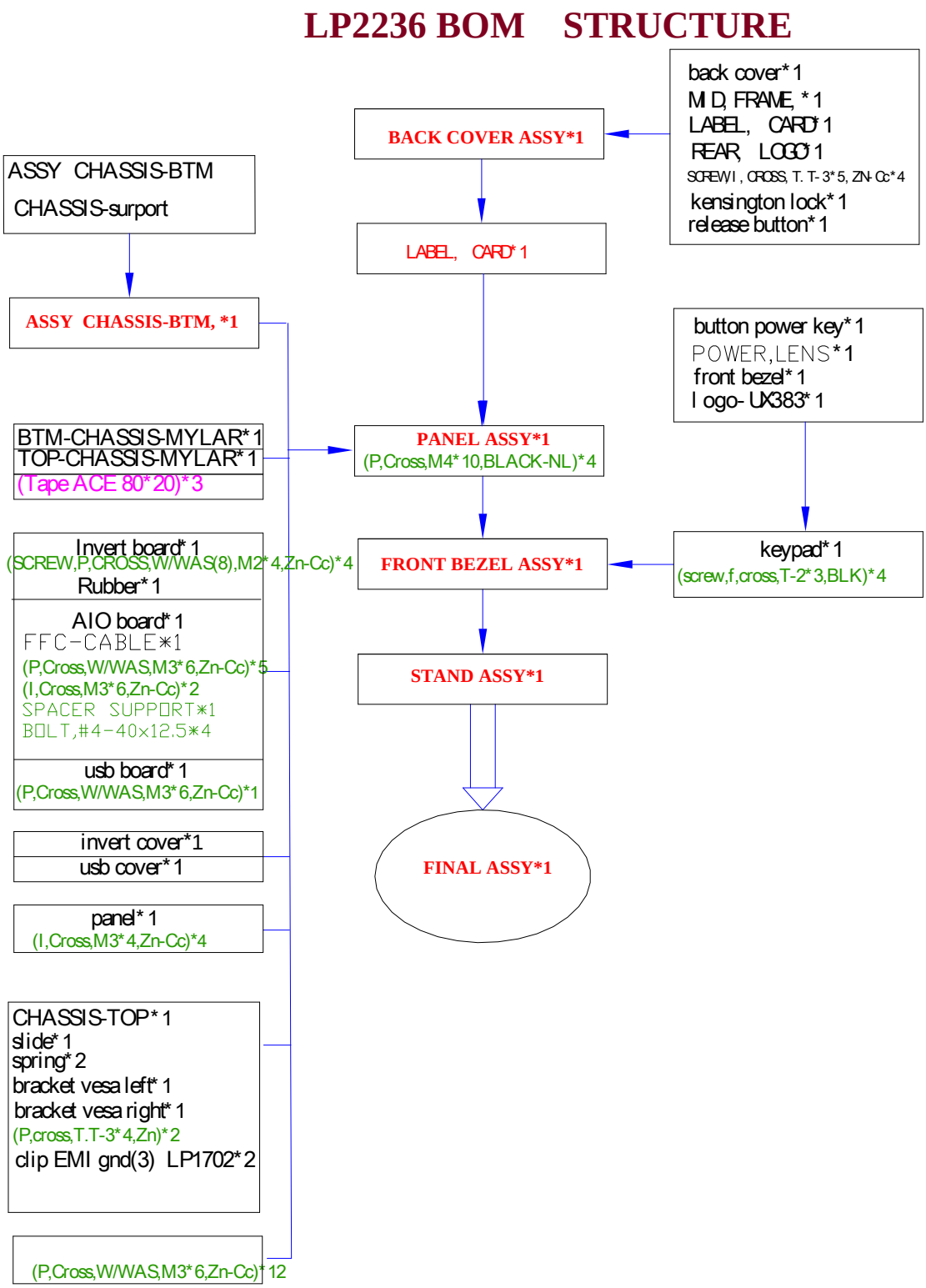


2. 2209W Disassembly Block



Note: 1. The arrows point out the direction of disassembly.

3. 2209W Assembly Block



Note: 1. The arrows point out the direction of assembly

Chapter 5- TEST AND ADJUSTMENT

Function key Definitions

1. Control buttons on the front bezel

2. KEY FUNCTION

CONTROL KEY	KEYS FUNCTION
[MENU]	A. When OSD isn't shown on screen, press [MENU] to enter OSD interface B. When OSD displays, press [MENU] to exit OSD
[🡅] [🡇]	A. When "MENU OSD" displays, press these keys to change the contents of an adjustment item, or change an adjustment value B. When "MENU OSD" un-displays, press[🡅] to adjust Brightness and Contrast; And press[🡇]to enter Auto adjustment progress
[✓]	Input state select or enter the OSD sub menu when OSD displays
[POWER]	Power on or off the monitor

3. Hot Key Operation

FUNCTION	HOT KEY OPERATION					DESCRIPTION
	MENU	[🡅]	[🡇]	ENTER	POWER	
FACTORY MODE	•	•			ON	Press [🡅]& [MENU] at the same time, and then press [POWER] for DC power on. Press the [🡅] ke to enter factory menu
Brightness& Contrast		•				To show the Brightness& Contrast menu
Auto adjustment			●			Enter Auto adjustment progress
Select Input				●		Select the input source

4. OSD Control

First	Second	Third	Default	VGA Input	DVI Input
Brightness	Brightness		75	Yes(DCR off)	Yes
	Contrast		75	Yes	Yes
Auto Adjust				Yes	No
Input Source	Auto Select			Yes	Yes
	VGA				
	DVI-D				
Color Settings	Input Color Format	RGB		Yes	Yes
		YPbPr			
	Gamma	PC	PC		
		MAC			
	Mode Selection	Graphics			
		Video			
	Present Modes	Standard			
		Multimedia			
		Game			
		Warm			
		Cool			
		Custom(R,G,B)			
	Hue		50		
	Saturation		50		
	Demo Mode	Enable			
		Disable			
	Reset Color Settings				
Display Settings	Wide Mode	Fill		Yes	Yes
		4:3			
	Horizontal Position		50	Yes	No
	Vertical Position		50	Yes	No
	Sharpness		50	Yes	Yes
	Pixel Clock		50	Yes	No
	Phase			Yes	No
	Dynamic Contrast	off		Yes	No
		on			
	Reset Display Settings			Yes	Yes
Other Settings	Language	English		Yes	Yes
		Espanol			
		Francais			
		Deutsch			
		Portugues(Brasil)			
		简体中文			
		日本語			

	Menu Transparency		20	Yes	Yes
	Menu Timer		20	Yes	Yes
	Menu Lock	Unlock		Yes	Yes
		Lock			
	Menu rotation	landscape		Yes	Yes
		portrait			
	Audio Option	On		Yes	Yes
		Off			
	DDC/CI	Enable		Yes	Yes
		Disable			
	LCD Conditioning	Disable		Yes	Yes
		Enable			
	Factory Reset			Yes	Yes

In OSD dialog box, should show current input video signal (1 stands for Auto Detect, 2 stands for VGA input, 3 stands for DVI input), current model resolution @ Ver. Freq., optimum resolution.

5. OSD Message

After disconnecting the cable, Self Test message should show as below:

"No VGA Cable"

Present input status (1. Auto Detect, 2 VGA input, 3 DVI input), and present input source should be shown on the top of the message.

After disabling the sync output for VGA (DVI), DPMS message should show as below for 3s:

"MESSAGE

Entering Power save Mode"

Press the "" or "" key and the DPMS message should show as below:

"MESSAGE

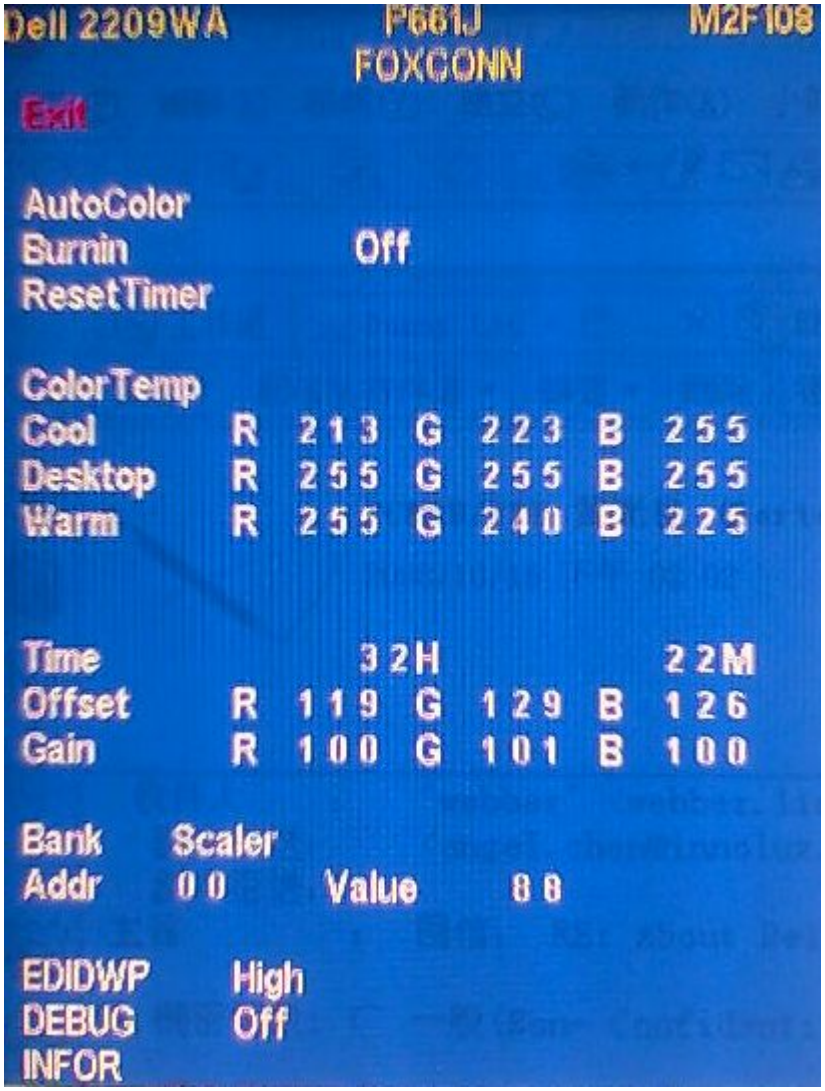
There is no sigal coming from you computer

Press any key on the keyboard or mouse to wake it or press the

Input button on your display to switch to another source

Factory Mode Introduction

With signal input, press "*Power*" button on right corner of front bezel to turn off the monitor. Press "*Menu*" and ""("*Plus*)buttons together, and then press "*Power*" button to turn on the monitor. After power on, the device is enter factory mododе ,press ""("*Plus*)buttons to call out factory menu (see the following Fig)



Exit: Exit from Factory mode and back to NO OSD Status.
Panel: The current-setting panel is highlighted.
Auto Color: Automatically calibrate chip ADC parameters by using internal DAC.
Burn In: Enable or disable the Burn-in mode by choosing ON or OFF.
Reset Time: Reset the “Turn-on time” of the panel to 0H0M.
Color Temp: The R, G, B of Blue Preset (9300K), Red Preset (5700K) and Normal Preset (6500K) are generated
from scaling chip’s back-end white-balance program.
Time: Turn-on time of the panel.
DEBUG: Debug tool of scale IC U105.

Dell panel P/N

LCD supplier	Panel	Supplier P/N	Dell P/N
LGD	22W	LM220WE4	P661J

Burn-in pattern

Burn-in pattern will self-generate automatically without VGA and DVI cable plugged in when the monitor set at Burn-in on mode and burn-in pattern will not be stopped until

plugging in the VGA /DVIcable. Exit Burn-in mode method as followe: plugging in the VGA/DVI cable, press “Menu” button to call out OSD Main Menu, Press “Plus Key”to select“Other Settings submenu”then choose Factory reset.

Auto Color Balance (Automatically calibrate chip ADC parameter by using chip internal DAC.)

5.1 If it is a new-built set, press “*Auto/Plus*” button to execute “Auto Color” at standard video pattern 5-MOSAIC pattern

5.2 Please confirm the following steps to perform “Auto Color Balance”:

- Connect the VGA cable with the standard video pattern generator and display 5-MOSAIC pattern on the monitor.
- press “*Power*” button on right corner of front bezel to turn off the monitor.
- Press “*Menu*” and “▲”(*Plus*)buttons together, and then press “*Power*” button to turn on the monitor. After power on, the device is enter factory modode ,press “▲”(*Plus*)buttons to call out factory menu
- choose *Auto Color* item, then execute *Auto Color* item.
- After the “*Auto Color Balance*” process finished, go back to “Other Settings Menu”, and press “Factory Reset” to exit Factory mode

Upgrade Firmware to Serial via Flash Cable by ISP_Tool V4.100.exe

7.1 Connect the monitor and PC follow Fig 11

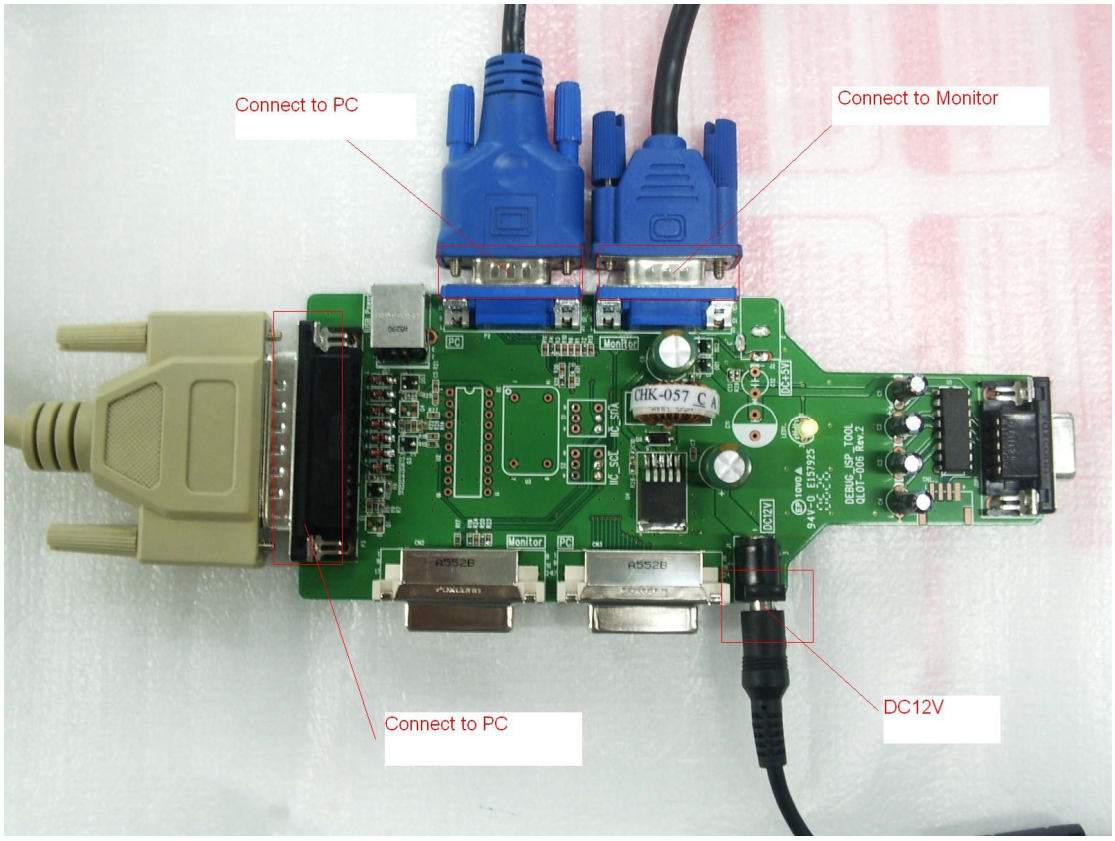


Fig 11

※ The detailed reprogramming procedures will be described in ISP User's Guide.

Edid 8.4.rar Edid.rar ISP User's Guide_20070312.rar ISP_Tool V4.100.rar

After repair, to ensure the quality you should do the following test and adjustment.

Item	Content	Equipment
Test OSD function	1.Signal is set as 1680×1050@60Hz under General-1 2. LCM button are from left to right, checking whether each single function key and compound function key can be worked.	Chroma Signal Generator
Contrast Check	1. Set input mode to 1680×1050@60Hz 2. Set to 32gray scale pattern 3. Set contrast to the maximum. At most 6 bars cannot be distinguished.	Chroma Signal Generator
Color Temperature	1. Do “Auto color Balance” at 1680×1050@60Hz, 32gray scale pattern 2. Measure color temperature, check if it complies with the following temperature : Warm x=0.328 +/- 0.03, y=0.344+/-0.03 Desktop x= 0.313 +/- 0.03, y=0.329+/-0.03 Cool x= 0.283 +/- 0.03, y=0.298+/-0.03	Chroma Signal Generator and color analyzer
Modes switching check	1. Use Chroma Pattern Generator to make sequence. VESA (640x480 800x600 1024x768 1152x864 1280x1024 1680×1050@60Hz), the detail supported modes (see table 1) and power saving signal. 2. Confirm the above timing modes must be full screen and the picture must be normal. 3. LED is amber at power saving mode.	Chroma Signal Generator
VGA cable detector	When select VGA model and VGA cable is not plugged out, self-test OSD will be floated.	Visual check
Y measurement at default setting	1. Set brightness and contrast to default value 75 at 6500K 2. With full white pattern, Y shall be 220 ± 20 cd/m^2	Chroma Signal Generator and Color Analyzer
OSD Lock Test	Soft Lock: When OSD is locked, this icon should appear for only 2 seconds with all buttons pressed, except for the “*Menu*” and “*Power*” ones. Hard Lock: Press “*Menu*” button for 15 seconds enables the “locked” icon to be displayed, which will lock All buttons expect for the “*Power*”. Press “*Menu*” button for another 15 seconds enables the “unlock” icon to be shown.	Visual Inspection
Panel Flicker check	1. Mode:1680×1050@60Hz 2. Set Brightness& Contrast to default value (75%) 3. Do “Auto Adjustment” 4. check whether there’s flicker on the center of the picture.	Equipment:: Chroma Signal Generator & PC
Power saving	1. Mode:1680×1050@60Hz 2. Pattern: full Black 3. Brightness: Max. 4. Contrast: Default 5. Check power consumption at each modes	Chroma signal generator and Power meter AC input:230V/50Hz

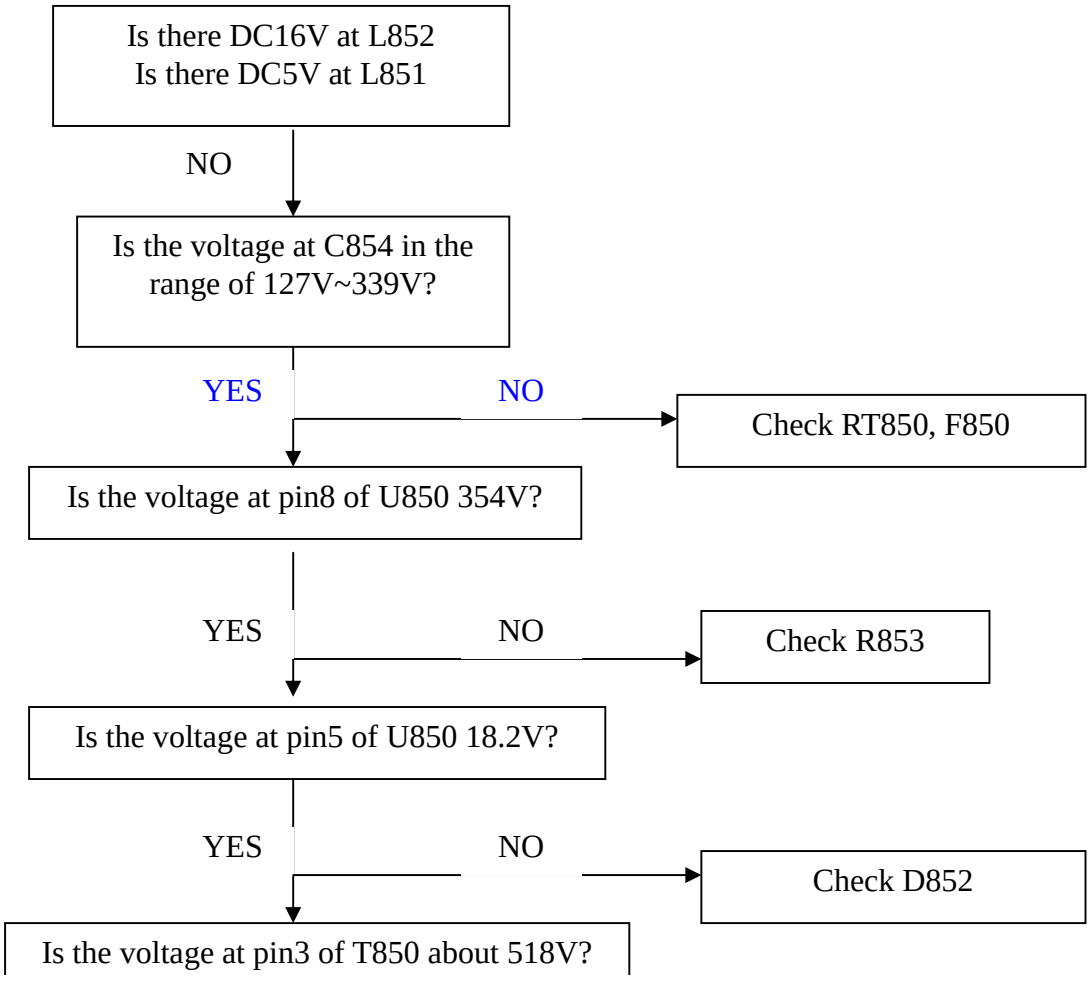
State	Power Consumption	LED color
Max brightness Power	< 125W(with USB & Audio load)	Blue
	< 100W(without USB and without Audio)	
Stand By	< 1W	Amber

Chapter 6- TROUBLE SHOOTING

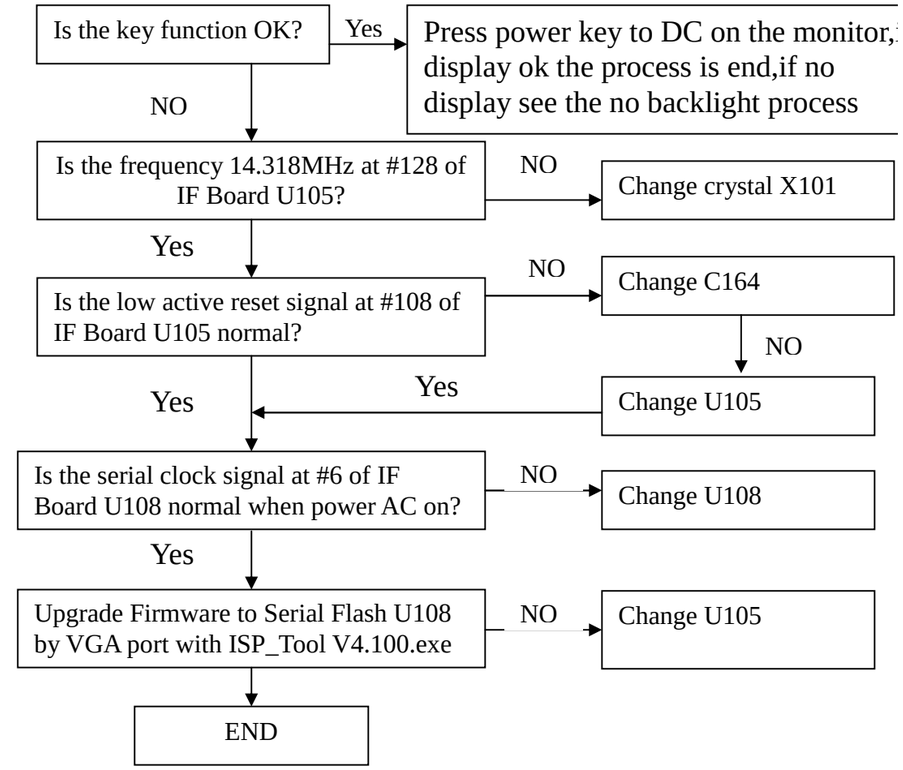
Common Acknowledge

- If you change the M/B, be sure that the U101,U102 and U105 these three components also changed to the new M/B because there was program inside. If not, please re-write EDID or upload firmware into serial flash(U105) via VGA Cable. How to do please refer to the Page 19.
- If you adjust clock and phase, please do it at condition of Windows shut down pattern.
- Please confirm the R/G/B color under 32gray scale pattern.
- This LCM is analog interface. So if the entire screen is an abnormal color that means the problem happen in the analog circuit part, if only some scale appears abnormal color that stand the problem happen in the digital circuit part.
- If you check the H/V position, please use the crosshatch pattern.
- This LCM support 10 timing modes, if the input timing mode is out of specification, “Cannot Display this Video Mode” will be displayed on the screen.
- If brightness uneven, repairs Inverter circuit or change a new panel.
- If you find the vertical line or horizontal line lost on the screen, please change panel.
- If the self-test pattern is moving on the screen, please check whether VGA Cable is plugged in the Monitor or PC if select analog model on OSD or check whether DVI Cable is plugged in the Monitor or PC if select DVI model on OSD . If the VGA or DVI Cable is plugged in well, please change another VGA or DVI cable.

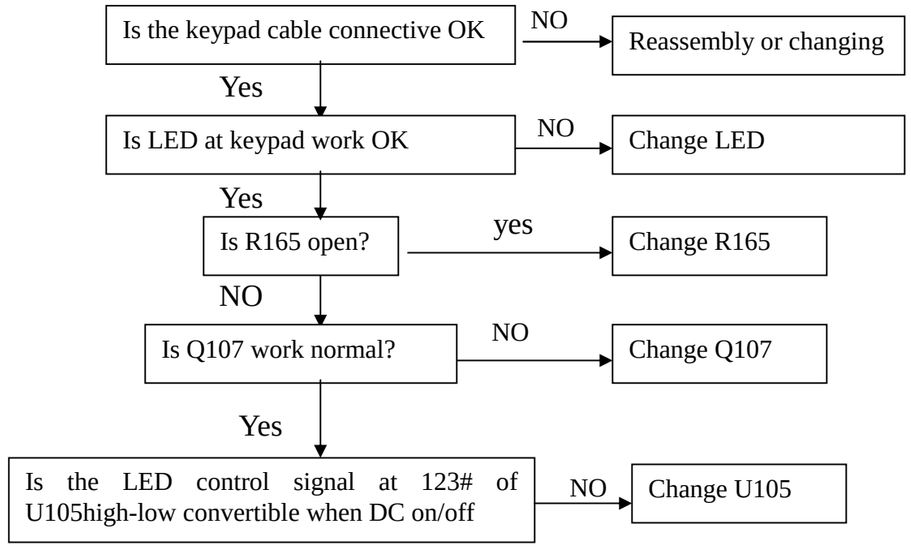
No Power and LED Off

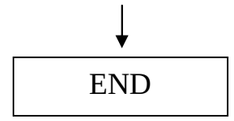


Power(include IF +5Vand +3.3V) supply normal but LED off and no display

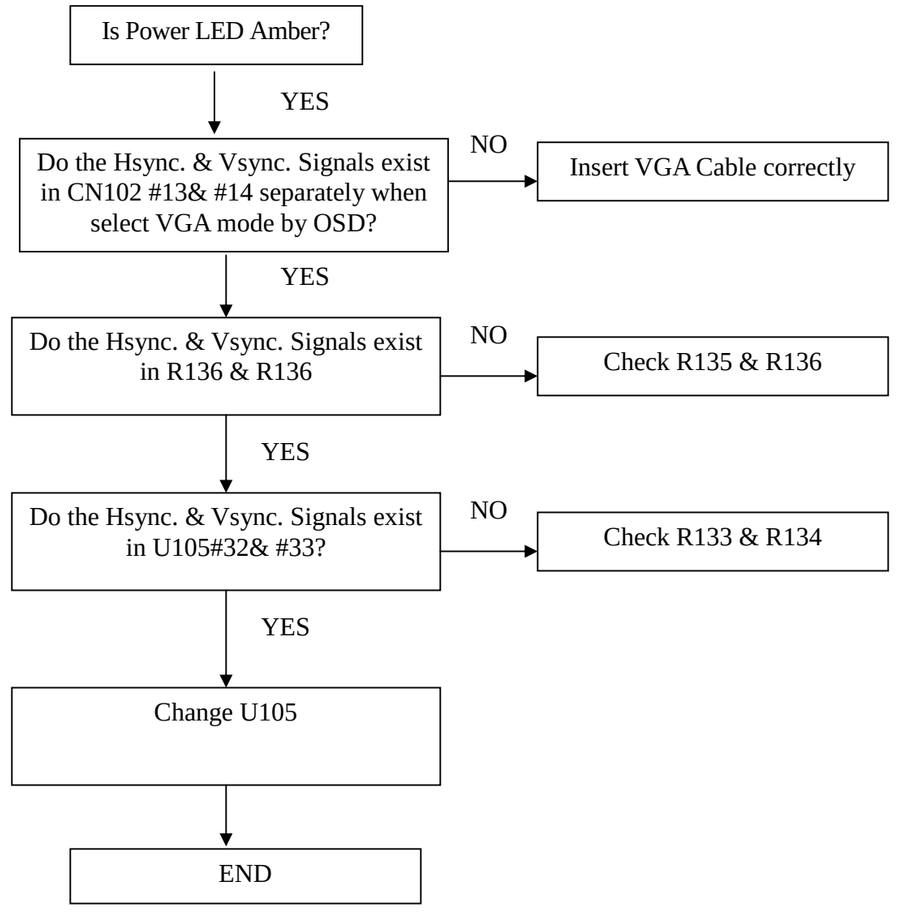

Is the key function OK?
Yes
Press power key to DC on the monitor,i
display ok the process is end,if no
display see the no backlight process
NO
Is the frequency 14.318MHz at #128 of IF Board U105?
NO
Change crystal X101
Yes
Is the low active reset signal at #108 of IF Board U105 normal?
NO
Change C164
NO
Yes
Yes
Change U105
Is the serial clock signal at #6 of IF Board U108 normal when power AC on?
NO
Change U108
Yes
Upgrade Firmware to Serial Flash U108 by VGA port with ISP_Tool V4.100.exe
NO
Change U105
END

Power(include IF +5Vand +3.3V) supply and display normal only LED off

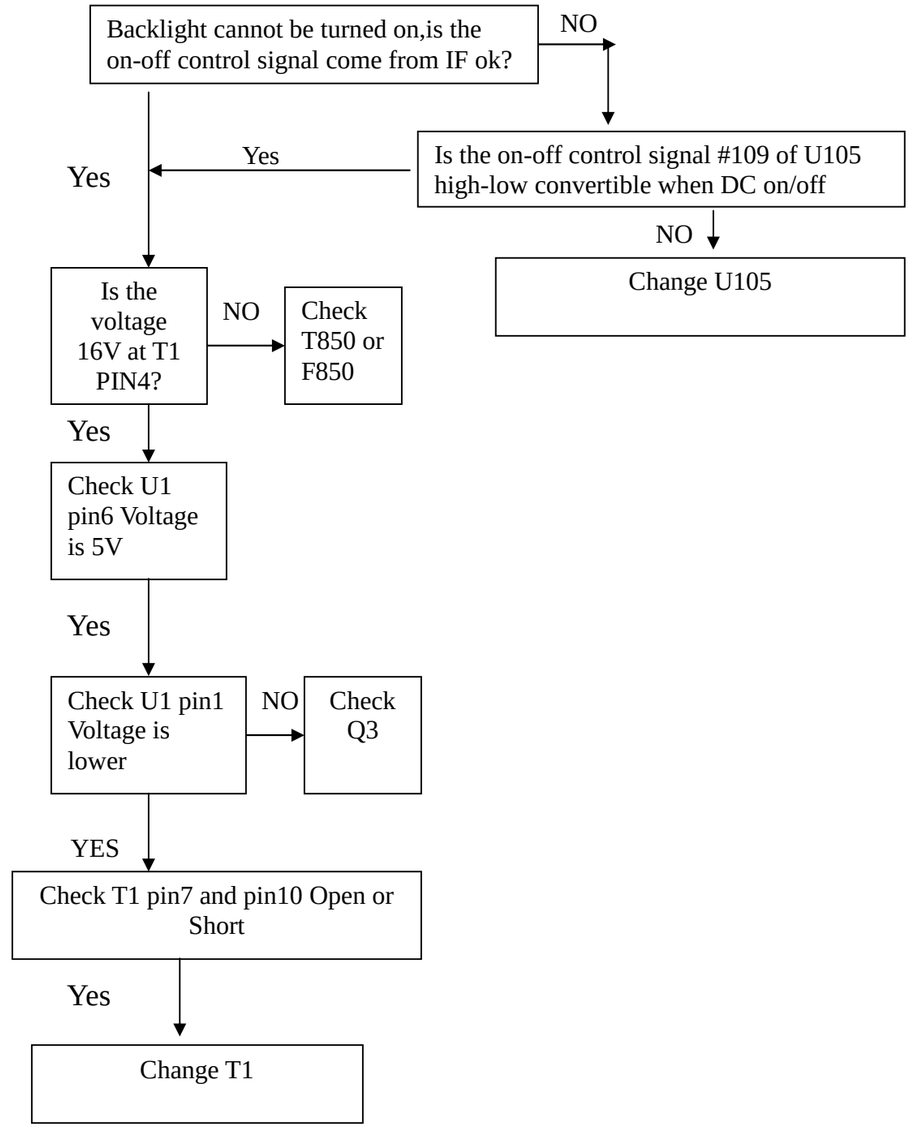




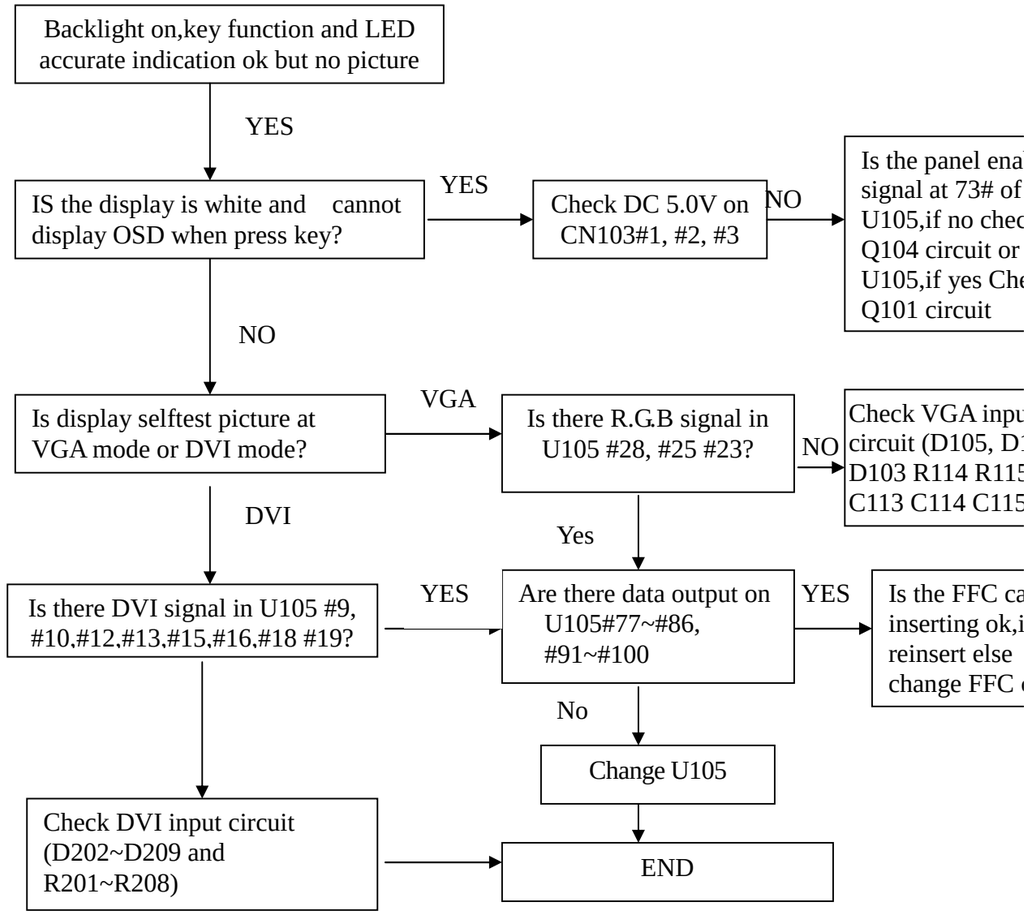
Power (include IF +5Vand +3.3V) supply normal but LED Amber


Is Power LED Amber?
YES
Do the Hsync. & Vsync. Signals exist in CN102 #13& #14 separately when select VGA mode by OSD?
NO
Insert VGA Cable correctly
YES
Do the Hsync. & Vsync. Signals exist in R136 & R136
NO
Check R135 & R136
YES
Do the Hsync. & Vsync. Signals exist in U105#32& #33?
NO
Check R133 & R134
YES
Change U105
END

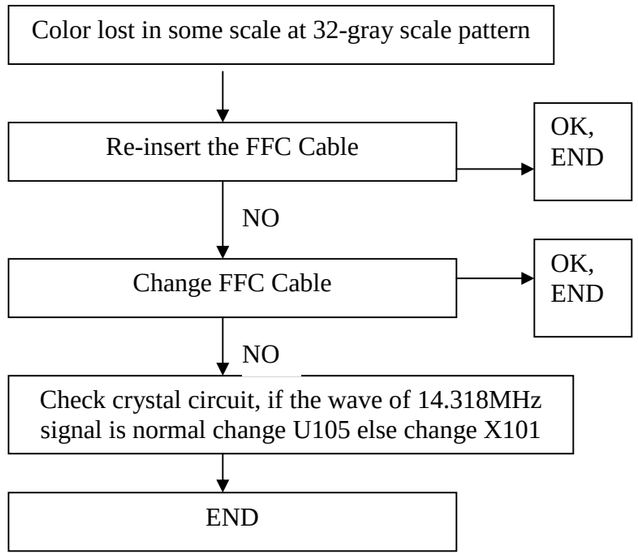
4.Power (include IF +5Vand +3.3V) supply normal ,key function OK,but backlight can't be turned on



5. Backlight on,key function and LED accurate indication ok but no picture


Backlight on,key function and LED accurate indication ok but no picture
YES
IS the display is white and cannot display OSD when press key?
YES
Check DC 5.0V on CN103#1, #2, #3
NO
Is the panel ena signal at 73# of U105,if no chec Q104 circuit or U105,if yes Che Q101 circuit
NO
Is display selftest picture at VGA mode or DVI mode?
VGA
Is there R.G.B signal in U105 #28, #25 #23?
NO
Check VGA inpu circuit (D105, D1 D103 R114 R115 C113 C114 C115
DVI
Yes
Is there DVI signal in U105 #9, #10,#12,#13,#15,#16,#18 #19?
YES
Are there data output on U105#77~#86, #91~#100
YES
Is the FFC ca inserting ok,i reinsert else change FFC
No
Change U105
Check DVI input circuit (D202~D209 and R201~R208)
END

6.At 32-gray scale pattern, color lost in some scale


Color lost in some scale at 32-gray scale pattern
Re-insert the FFC Cable
OK, END
NO
Change FFC Cable
OK, END
NO
Check crystal circuit, if the wave of 14.318MHz signal is normal change U105 else change X101
END

Chapter 7- RECOMMENDED PART LIST

2209WA Critical Parts List

Itm	Category	Component Type	Location	Supplier	Component number	Suppiler PN	Object description
1	Critical	E-CAP	C854,	SAMXON	420271214585R	ERT127M2WL45PB**P	CAP SE 120UF/450V M,
				SU'SCON		SE450M121K45T022ZCFR	CF 18X45(BLA),
				ELITE		PV2W121MS31845RP	
2	Critical	PFC-CHOCK	L853,	FOXCONN	425000011080R	2MCQA2620-002A	COIL CHK PQ2620 JPP4
				FRONTIER		SPV2620-10-LFR	CHK-108 ROHS
				LISHIN		QFK8002EL	
				MEIKAI		TP2620A-451	
3	Critical	Transformer	T850,	FOXCONN	426000091280R	2MWQA3220-002A	XFMR SW DIP PQ3220
				FRONTIER		SPV3205-01-LFR	700uH SPW-128
				LISHIN		PFK8032EL	
				MEIKAI		BCK-3218	
4	Critical	Transformer	T900,	FOXCONN	426000091290R	2MWQA2620-002A	XFMR SW DIP PQ2620
				FRONTIER		SPV2602-11-LFR	650uH SPW-129
				LISHIN		PFK8031EL	
				MEIKAI		BCK-2556	

5	Function	IC	U850,	SG,	412000532021R	SG6901ASZ	IC SG6901ASZ SOP20(SG)RoHS
6	Function	IC	U950,	LEADTREND,	412000453820R	LD7575PS	IC LD7575PS SOP8(LEADTREND) RoH
7	Performance	EEPROM	U103,U201	CATALYST	412000480990R	CAT24FC02WI-TE13	IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS
				ST	412000480280R	M24C02-WMN6TP	IC M24C02-WMN6TP SO8 (ST)
				ATMEL	412000435481R	AT24C02BN-SH-T 2K	IC AT24C02BN-SH-T 2K SOIC8(ATMEL)RoHS
8	Performance	EEPROM	U106	ATMEL	412000224482R	AT24C16BN-SH-T	IC AT24C16BN-SH-T 16K(ATMEL) SOIC 8 ROH
				ST	412000224280R	M24C16-WMN6TP	IC M24C16-WMN6TP SO8 (ST) ROHS
				CATALYST	412000481990R	CAT24C16WI-TE13	IC CAT24C16WI-TE13 SOIC-8(CATALYST)RoHS
9	Critical	Regulator	U301	UTC	412000372020R	LD1117AL-3.3V-A	IC LD1117AL-3.3V-A SOT-223(UTC RoHS
				AISEMI	412000372830R	AS1117R-3.3	IC AS1117L-3.3TR-LF,SOT2 EMI)RoHS
				E-CMOS	412000598990H	EC50117KBG 3.3V	IC EC50117KBG 3.3V SOT223(E-CMOS)
				BCD,	412000372070R	AZ1117H-3.3	IC AZ1117H-3.3 SOT-223(AAC)RoHS
10	Critical	Regulator	U101	ANACHIP,	412000332130R	AP1117D33LA 3.3V	IC AP1117D33LA 3.3V (ANACHIP) TO-252-3L,
				A1SEMI,	412000332830R	AS1117R-3.3.TR-LF,	IC AS1117R-3.3.TR-LF,TO-2 SEMI)RoHS
11	Critical	Regulator	U102	E-CMOS	412000599990H	EC50117BBG 1.8V	IC EC50117BBG 1.8V SOT223(E-CMOS)
				UTC	412000330020R	LD1117AL-1.8V-A	IC LD1117AL-1.8V-A SOT223(UTC)
				A1-SEMI	412000330830R	AS1117L-1.8/TR	IC AS1117L-1.8/TR-LF,SOT2
				BCD,	412000330070R	AZ1117H-1.8	IC AZ1117H-1.8 SOT223(AAC)RoHS
12	Function	IC	U302	SMSC	412000668390R	USB2514	IC USB2514-AEZG 36QFN(SMSC)
14	Function	Serial Flash	U108	SST	412000494190R	SST25LF020A-33-4C-SAE	IC SST25LF020A-33-4C-S SOIC8(SST)ROHS
				MXIC	412000661620R	MX25L2025MC-12G	IC MX25L2025MC-12G SOP8(MXIC)RoHS
				PMC	412000494310R	PM25LV020-100SCE	IC PM25LV020-100SCE SOIC8(PMC)RoHS
15	Function	Scaler	U105	MSTAR	412000653060R	TSUMU58EHJ-LF-2	IC TSUMU58EHJ-LF-2 PQFP128(MSTAR)Rohs
16	Function	connector	CN103	CVILUX	444099030040R	C11330MG	CON, SMD 1.0MM 30PIN lock RoHS
				P-TWO		HS9030E	
17	PCB	PCB		EXPRESS	491881500000H	PCB	PCB,K/P ,2/ENIG/FR4 /08,LP2236,HF
				HsiangKuo			
18	PCB	PCB		HsiangKuo	491660300100H	PCB	PCB,CNV-U,1/OSP /CEM1/12,LP1931 HF
				TAT CHUN			
19	PCB	PCB		HsiangKuo EXPRESS	491881200100H	PCB	PCB,M/B ,2/OSP /FR4 /12,LP2236,HF
20	Function	connector	P1,P2,	FOXCONN	444179001010R	CONN SPRING H/V	CONN SPRING H/V 1P

			P3,P4, P5,P6, P7,P8, P9,P10, P11,P12	CVILUX			
21	Function	connector	CN1,	CVILUX	430631100070R	10P 2.0MM 90° SMD W/LOCK	WFR 10P 2.0MM 90° S W/LOCK ROHS
				FCN			
				JOWLE			
22	Function	Capcitor	C5	Sanyo	421024700350R	F12 35SVPD47M	CAP OS SVPD 47UF 35 ℃ SMD 10X13
23	Critical	Mosfet	Q1,Q2,Q3,Q4,	APEC	410050108290R	AP9962AGH	XSTR AP9962AGH,N-CH,TO2 RoHS
				NIKO	410050108430R	P1504BDG	XSTR P1504BDG,N-CH,TO25 RoHS
24	Performance	IC	U1	O2	412000689630R	OZ9926A	IC OZ9926A SOIC24(O MICRO)RoHS
25	PCB	PCB		EXPRESS	491882200100H	PCB	PCB,INV ,2/OSP /FR4 /12,LP2236
				Hsiangkuo			
26	Function	Transformer	T1,T2,T3, T4,T5,T6, T7,T8,T9, T10,T11, T12	DARFON	426000091270R	SPW-127	XFMR SW SMD EE13 F SPW-127 ROHS
				FRONTIER			
				TDK			
27	Mylar	Mylar		富准	505040209902R	INVERT-MYALR,LP2236	INVERT-MYALR,LP223

ATTACHMENT 1- Bill of Material

1. main board BOM

ITEM	P/N	Description	Supplier	Usage	Location
	791921200A00R	PCBA,MAIN BOARD,W/O SPK,LP2236-A19,ROHS			
10	791921220A00R	PCBA,MAIN BOARD,W/O SPK,MI,LP2236-A19,RO		1	
20	791921210A00R	PCBA,MAIN BOARD,W/O SPK,AI,LP2236-A19,RO		1	
30	629030023600R	PROGRAM,W/O SPK,LE23M7-A18 ROHS		1	
40	641120000010R	HDCP RECEIVE DEVICE KEY	DCP LLC,	1	
50	511130001200R	SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0	TOMAS,	14	
60	511110000501R	SILICONE RTV RUBBER,UB-511(EURO)	EURO,	0.45	
70	511110000103R	HOT-MELT ADHESIVES,UB-618	U-BOND,	2.1	
70	511110000101R	HOT-MELT ADHESIVES (#526)	EXCELSTAR,	0	

ITEM	P/N	Description	Supplier	Usage	Location
	791921210A00R	PCBA,MAIN BOARD,W/O SPK,AI,LP2236-A19,RO			
10	791921250A00R	PCBA,MAIN BOARD,W/O SPK,AI/A,LP2236-A19,		1	
20	791921260A00R	PCBA,MAIN BOARD,W/O SPK,AI/R,LP2236-A19,		1	

ITEM	P/N	Description	Supplier	Usage	Location
	791921220A00R	PCBA,MAIN BOARD,W/O SPK,MI,LP2236-A19,RO			

10	416193343012R	CAP MEX 0.33uF 275V K X2,F15mm RoHS	ARCOTRONIC, EUROPTRONIC,HJC,SCC,	2 C852,C8
20	416211023620R	CAP MEY 1000pF 250V M Y1,F10mm W/O FORMI	JNC,POE,SUCCESS(SEC),	4 C885,C8
30	416212223620R	CAP MEY 2200pF 250V M Y1,F10mm W/O FORM	JNC,POE,SUCCESS(SEC),	3 C850,C8
40	420271214585R	CAP SE 120UF/450V M,105℃ CF 18X45(BLA),	ELITE,SAMXON,SU'SCON,	1 C854,
50	416351054011R	CAP MPPN ROUND 1UF/450V K F15 MINI	EUROPTRONIC,	1 C874,
60	416300144510R	CAP PP 0.01uF 400V J,F7.5 RoHS	EUROPTRONIC,HJC,SCC,	1 C855,
70	416304724510R	CAP PP 0.0047uF 400V J,F5,RoHS	EUROPTRONIC,HJC,NISSEI,SCC,	1 C955,
80	440149000340R	SKT AC 10A/250V U/C/V,W/O H ROHS	DLK,TECX,	1 CN850,
90	442299001100R	CON,POWER JACK R/A 1P,JPD1030- H224-4F,R	DLK,FOXCONN,S.C.,ZJGHJ,	1 CN853,
100	411030060013R	DIO FR307G-03 1000V/3A DO-201AD(TSC)	TSC,	1 D851,
100	411030060023R	DIO FR30-10G 1000V/3A DO-201AD(FRONTIER	FRONTIER,	0
110	411090050092R	SCHTKY SB5150F46 150V/5A DO-201AD (PANJI	PANJIT,	2 D930,D9
110	411090050012R	SCHTKY SR5150PT-A3 150V/5A DO-201AD (CH	CHENMKO,	0
120	411020078020R	DIO IN5406F64-LF 600V/3A DO-201AD(FEC)R	FRONTIER,	1 D856,
120	411020078090R	DIO IN5406 600V/3A DO-201AD-F112(PEC)RoH	PANJIT,	0
130	412140002380R	IC LTV817M-PR VDE (LITE-ON) P=10mm RoHS	LITEON,	3 I850,I95
130	412140001390R	IC EL817M-B(EVERLIGHT)RoHS	EVERLIGHT,	0
140	425000011090R	COIL CHK BR3X20 2.2uH ROHS	CHILISIN,EASYMAGNET, FRONTIER,TAICHANG,	2 L854,L9
150	425000011110R	COIL CHK T9*5*3-C A05 64uH CHK-111	FOXCONN,FRONTIER, TAICHANG,	1 L930,
160	415350100550R	RES MOF 2W 10Ω J,MINI,HK15, RoHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R960,
170	415503228530R	RES WW 3W 0.22 OHM J,KNP HK20 MINI	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R870,
180	415360200550R	RES MOF 3W 20Ω J,HK20 ,MINI,RoHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R856,
190	415360753550R	RES MOF 3W 75KΩ J,HK20, MINI, ROHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R855,
200	415502128551R	RES NKNP 2W 0.12Ω J, MINI,HK17.5,ROHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R853,
210	415502518551R	RES WW NKNP 2W 0.51Ω J,MINI,HK15 ROHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R959,
220	432009401400R	NTC 3Ω 5A 10ψ P=5mm, F RoHS	THINKING,UPPERMOST,	1 RT851,
230	432009401500R	NTC 3Ω 7A P=7.5mm 15∮,F, RoHS	THINKING,UPPERMOST,	1 RT850,
240	420264710322R	CAP 470uF/35V M,13x21max,125℃ ,S 3000h	SAMXON,SU'SCON,	5 C862,C8 C865,C9
250	415360101550R	RES MOF 3W 100Ω J,HK20,MINI, ROHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1 R930,
260	425000011100R	COIL CHK T22*14*8-C A10 11mH CHK-110	CHILISIN,EASYMAGNET, FRONTIER,TAICHANG,	2 L851,L8
270	425000011080R	COIL CHK PQ2620 JPP4 450uH CHK-108 ROHS	FOXCONN,FRONTIER, LISHIN,MEIKAI,	1 L853,
280	426000091280R	XFMR SW DIP PQ3220 PC44 700uH SPW-128	FOXCONN,FRONTIER, LISHIN,MEIKAI,	1 T850,
290	426000091290R	XFMR SW DIP PQ2620 PC44 650uH SPW-129	FOXCONN,FRONTIER, LISHIN,MEIKAI,	1 T900,
300	430301000210R	HRN ASS'Y 10P 100mm UL1007#24 LOCK	FOXCONN,JVE,RISE,	1 CN852,

310	440819015030R	CON D-SUB FEM.15P RA W/O SCREW DZ11AA1-H	DLK,FOXCONN, TEKCON,ZJGHJ,	1	CN102,
320	430631080180R	WFR 2X4P 2.0MM 180° W/LOCK ROHS	CVILUX,FOXCONN,	1	CN104,
330	443842024060R	CON DVI-D RA 24+1P FEM.W/O SCR EW QH1112	DLK,FOXCONN,ZJGHJ,	1	CN201,
340	432008010270R	XTAL 14.31818MHz HC-49US DIP 16pF 30PPM	HUAN MOUN,TXC,ZGC,	1	X101,
350	432008010310R	XTAL 24.000MHz 20pF HC-49US 30PPM DIP,Ro	HARMONY,TXC,ZGC,	1	X301,
360	442849001020R	CON USB R/A 1P UC11123-LK1-4F, RoHS	FOXCONN,TEKCON,	1	P301,
370	442849001030R	CON USB A,R/A,8 POS,T/H UB11123-8D1-4F,R	FOXCONN,TEKCON,	1	P302,
380	430300802110R	HRN ASS'Y 8P 100MM UL1430#26	FOXCONN,HEIGHTEN,JVE,	1	CN303,
390	735110010100R	ASSY H/S,D853,D854,ROHS		1	
400	735110010110R	ASSY,H/S,D960,D961,ROHS		1	
410	735110010120R	ASSY,H/S,Q853&D860,ROHS		1	
420	735110010130R	ASSY,H/S,Q850,ROHS		1	
430	735110010140R	ASSY,H/S,D850,ROHS		1	
440	735110010150R	ASSY H/S,Q950,ROHS		1	

ITEM	P/N	Description	Supplier	Usage	Location
	735110010100R	ASSY H/S,D853,D854,ROHS			
10	411090031460R	SCHTKY SP10200-LF 200V/10A ITO220(SECOS)	SECOS,	2	D853,D8
10	411090030020R	SCHTKY SRF10-20CT-LF 200V/10A,ITO-220AB(	FRONTIER,	0	
10	411090031010R	SCHTKY MBRF10200CT 200V/10A ITO220AB(TSC	TSC,	0	
10	411090031311R	SCHTKY,SBR10200CTFP 200V/10A ITO-220AB(D	DIODES,	0	
20	507200007800R	HEATSINK,40 X20Xt15mm,LP2236	DMC,ORIENTAL POWER,	1	
30	509146308102R	SCREW,PW,CROSS W/WAS,M3*8,Zn	GAOYI,LIQUAN,YIJIE,	2	

ITEM	P/N	Description	Supplier	Usage	Location
	735110010110R	ASSY,H/S,D960,D961,ROHS			
10	411090009460R	SCHTKY SP10100-LF 100V/10A ITO220(SECOS	SECOS,	2	D960,D9
10	411090009312R	SCHTKY,SBR10100CTFP 100V/10A ITO-220AB(D	DIODES,	0	
10	411090009020R	SCHTKY SRF10-10CT-LF 100V/10A TO-220AB(F	FRONTIER,	0	
20	507200007800R	HEATSINK,40 X20Xt15mm,LP2236	DMC,ORIENTAL POWER,	1	
30	509146308102R	SCREW,PW,CROSS W/WAS,M3*8,Zn	GAOYI,LIQUAN,YIJIE,	2	

ITEM	P/N	Description	Supplier	Usage	Location
	735110010120R	ASSY,H/S,Q853&D860,ROHS			
10	410050087240R	XSTR FQPF12N60C N-CH TO220F(FAIRCHILD)Ro	FAIRCHILD,	1	Q853,
10	410050086370R	XSTR 2SK3797 N-CH SC-67(TOSHIBA)RoHS	TOSHIBA,	0	
10	410050098280R	XSTR STP13NK60ZFP, N-CH TO220FP(ST)ROHS	ST,	0	
20	411030059240R	DIO ISL9R860PF2 600V/8A TO220F(FAIRCHIL	FAIRCHILD,	1	D860,
20	411030059280R	DIO STTH8R06FP 600V/8A TO-220FPAC(ST)RoH	ST,	0	
20	411030059210R	DIO BYC8X-600 600V/8A TO220F(philips)	PHILIPS,	0	
30	507200007800R	HEATSINK,40 X20Xt15mm,LP2236	DMC,ORIENTAL POWER,	1	
40	509116308100R	SCREW,P,CROSS,M3*8,Zn	GAOYI,YIJIE,	2	

ITEM	P/N	Description	Supplier	Usage	Location
	735110010130R	ASSY,H/S,Q850,ROHS			
10	410050084130R	XSTR SPA11N80C3 N-CH PG-TO220-3-31(INFIN	INFINEON,	1	Q850,
10	410050085280R	XSTR STF11NM80 N-CH TO220FP(ST)RoHs	ST,	0	
10	410050057280R	XSTR STP8NK80ZFP N-CH TO220FP (ST)	ST,	0	

10	410050060130R	XSTR SPA06N80C3 N-CH PG-TO220- 3-31(INFI	INFINEON,	0	
20	507200007800R	HEATSINK,40 X20Xt15mm,LP2236	DMC,ORIENTAL POWER,	1	
30	509116308100R	SCREW,P,CROSS,M3*8,Zn	GAOYI,YIJIE,	1	

ITEM	P/N	Description	Supplier	Usage	Location
	735110010140R	ASSY,H/S,D850,ROHS			
10	411050011090R	DIO BRDG GBU8J 600V/8A(PANJIT)RoHS	PANJIT,	1	D850,
10	411050010020R	DIO BRDG GBU8-06-BF52-LF 600V/8A(FEC)RoH	FRONTIER,	0	
20	507200007810R	HEATSINK,30x20xt15mm,for D850,LP2236	DMC,ORIENTAL POWER,	1	
30	509146308102R	SCREW,PW,CROSS W/WAS,M3*8,Zn	GAOYI,LIQUAN,YIJIE,	1	

ITEM	P/N	Description	Supplier	Usage	Location
	735110010150R	ASSY H/S,Q950,ROHS			
10	410500059290R	XSTR AP2761I-A N-CH TO-220CFM ADVANCED P	APEC,	1	Q950,
10	410050103050R	XSTR FMA09N65GX N-CH TO-220F(FUJI) RoHS	FUJI,	0	
10	410050057280R	XSTR STP8NK80ZFP N-CH TO220FP (ST)	ST,	0	
10	410050060130R	XSTR SPA06N80C3 N-CH PG-TO220- 3-31(INFI	INFINEON,	0	
20	507200007820R	HEATSINK,30x20xt15mm,for Q950,LP2236	DMC,ORIENTAL POWER,	1	
30	509116308100R	SCREW,P,CROSS,M3*8,Zn	GAOYI,YIJIE,	1	

ITEM	P/N	Description	Supplier	Usage	Location
	791921250A00R	PCBA,MAIN BOARD,W/O SPK,AI/A,LP2236-A19,			
10	411020063020R	DIO 1N4007-LF 1000V/1A DO-41(F RONTIER)R	FRONTIER,	2	D858,D8
10	411020063010R	DIO 1N4007 1000V/1A DO-41(TSC) RoHS	TSC,	0	
10	411020063040R	DIO 1N4007 1000V/1A DO-41(MOSPECRoH	MOSPEC,	0	
10	411020063460R	DIO 1N4007-LF 1000V/1A DO-41(Secos)RoHS	SECOS,	0	
10	411020063240R	DIO 1N4007 1000V/1A DO-41(FAIR CHILD)RoH	FAIRCHILD,	0	
20	411032006020R	DIO FR10-10-LF 1000V/1A AT(FRO NTIER)RoH	FRONTIER,	1	D951,
20	411020053090R	DIO PS1010R 1000V/1A DO-41(PAN JIT)RoHS	PANJIT,	0	
20	411032006040R	DIO FR107 1000V/1A DO-41(MOSPE C)RoHS	MOSPEC,	0	
30	415340472540R	RES MOF 1W 4.7KΩ J,AT MINI RoHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1	R865,
40	415320152540R	RES MOF 1/4W 1.5KΩ J,AT MINI RoHS	FUTABA,QUEENMAO, TZAI YUAN,UNIOHM,	1	R859,
50	414040208540R	RES FSM 1W 0.2Ω J,AT MINI RoHS	FUTABA,QUEENMAO, TZAI YUAN,	3	FR850,F
60	430613050100R	FUSE SLOW PICO II 5A/125V U/C,AT,ROHS	LITTELFUSE,	1	F853,
60	430613050101R	FUSE SLOW 5A/125V U/C,AT,ROHS	WALTER,	0	
70	432002200220R	FERRTIE BEAD 3.5*6*0.65 AT,RoHS	CHILISIN,MAGLAYERS,	6	L855,L8 L858,L8
80	411130620020R	ZENER 20V GDZ20B-LF DO34(FEC)ROHS	FRONTIER,	2	ZD951,Z
80	411130920020R	ZENER 20V GDZ20B DO34(PEC)ROHS	PANJIT,	0	
90	411130656920R	ZENER 5.6V GDZ5.6B-LF DO-34(FR ONTIER)Ro	FRONTIER,	1	ZD971,
90	411130956910R	ZENER 5.6V GDZ5.6B DO35(PANJIT)RoHS	PANJIT,	0	
90	411131456910R	ZENER 5.6V GDZ5.6B DO35(WILLAS)RoHS	WILLAS,	0	
100	411130630020R	ZENER 30V GDZ30A-LF DO34(FEC)ROHS	FRONTIER,	1	ZD972,
100	411130930010R	ZENER 30V GDZ30A DO35(PANJIT)RoHS	PANJIT,	0	
100	411131430010R	ZENER 30V GDZ30A DO35(WILLAS)RoHS	WILLAS,	0	
110	411130616011R	ZENER 16V GDZ16A-LF DO-34(FRONTIER)RoHS	FRONTIER,	1	ZD973,
110	411130916011R	ZENER 16V GDZ16A DO35(PANJIT)RoHS	PANJIT,	0	

120	411020084090R	DIO P6KE350A 600W/100A DO-15 (PANJIT)	PANJIT,	1	ZD851,
120	411020084010R	DIO P6KE350A 600W/100A DO-15 (TSC)	TSC,	0	
130	791921240A00R	PCBA,MAIN BOARD,W/O SPK,SMT,LP2236-A19,R		1	
140	411020064090R	DIO ER104 400V/1A DO-41(PANJIT RoHS	PANJIT,	1	D952,
140	411032001020R	DIO SF10-04-LF 400V/1A DO-41(F RONTIER)R	FRONTIER,	0	
150	430613040100R	FUSE SLOW PICO II 4A/125V U/C,AT,RoHS	LITTELFUSE,	2	F851,F8
150	430613040101R	FUSE SLOW 4A/125V U/C,AT,RoHS	WALTER,	0	

ITEM	P/N	Description	Supplier	Usage	Location
	791921260A00R	PCBA,MAIN BOARD,W/O SPK,AI/R,LP2236-A19,			
10	418210233030R	CAP CD X7R 1000pF/1KV K,VT 2X7R102K102K5	JNC,POE, SUCCESS(SEC),WANSHENG,	2	C858,C9
20	418222263030R	CAP CD X7R 2200pF/100V K,VT ,RoHS	JNC,POE,SUCCESS(SEC), WANSHENG,	1	C960,
30	418210133030R	CAP CD X7R 100pF 1KV K VT RoHS	JNC,POE,SUCCESS(SEC), WANSHENG,	3	C881,C8
40	420221000530R	CAP HG 10uF 50V M,105℃ VT,5x11,RoHS	LELON,SAMXON,SU'SCON,	1	C957,
50	420224700530R	CAP HG 47uF/50V M,105℃ VT,6.3X11,ROHS	LELON,SAMXON,SU'SCON,	4	C952,C1
60	420424710260R	CAP SD 470uF/25V M 105℃ ST 10x16,RoHS	LELON,SAMXON,SU'SCON,	1	C933,
80	420264710260R	CAP SH 470u/25V M,125C, ST, 10*16	SAMXON,SU'SCON,	2	C964,C9
90	430613830290R	FUSE TIME LAG 3.15A/250V,RoHS	BELFUSE,CONQUER, LITTELFUSE,WALTER,	1	F850,
100	412022002550R	IC AME431BAJATB25Z TO-92-3(AME RoHS	AME,	3	I851,I95
100	412022002240R	IC KA431AZ 1%,VT (FAIRCHILD) RoHS	FAIRCHILD,	0	
100	412022002830R	IC AS431 TO-92 VT(A1SEMI)RoHS	A1SEMI,	0	
100	412022002440R	IC AZ431BZ-ATRE1 TO-92(BCD) RoHS	BCD,	0	
110	410052001370R	XSTR SF0R3G42 TO-92 VT(TOSHIBA RoHS	TOSHIBA,	1	Q971,
110	410052005150R	THYRI MCR101L-6 TO-92(UTC)RoHS	UTC,	0	
120	418210313030R	CAP CD X7R 0.01UF 50V K,VT,ROHS	JNC,POE,SUCCESS(SEC), WANSHENG,	2	C861,C9
130	418222233030R	CAP CD X7R 2200pF 1KV K,VT RoHS	JNC,POE,SUCCESS(SEC), WANSHENG,	2	C867,C8
140	420431010431R	CAP EC 100uF 16V M,105℃ VT 5x11,RoHS	ELITE,LELON,SAMXON,SU'SCON,	1	C109,
150	420434700430R	CAP SM 47uF 16V M,105℃ VT 5x11 RoHS	ELITE,LELON,SAMXON,SU'SCON,	3	C305,C3
160	420434790430R	CAP EC 4.7uF 16V M,105℃ VT, 5x11,RoHS	ELITE,LELON,SAMXON,SU'SCON,	4	C312,C3
170	421013310460R	CAP OS SEP 330UF 16V M,105℃ ST 10X13	NICHICON,SANYO,	2	C962,C9
190	420221010430R	CAP HG 100UF 16V M,105℃ VT,6.3X11,ROHS	LELON,SAMXON,SU'SCON,	1	C102,

ITEM	P/N	Description	Supplier	Usage	Location
	791921240A00R	PCBA,MAIN BOARD,W/O SPK,SMT,LP2236-A19,R			
10	419341050650R	C SMD(1206) Y5V 1uF/50V Z RoHS	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	2	C812,C8
20	419341063650R	C SMD(1206) Y5V 10uF/25V Z RoHS	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	1	C818,
30	419311020010R	C SMD(0402) X7R 1000PF/50V K,RoHS	DARFON,TDK,WALSIN,YAGEO,	6	C814,C9 C967,C1
40	419312220010R	C SMD(0402) X7R 2200PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	1	C821,
50	419311030070R	C SMD(0805) X7R 0.01uF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	3	C816,C8
60	419301010510R	C SMD(0402) NPO 100PF/50V J,RoHS	DARFON,TDK,WALSIN,YAGEO,	1	C819,
70	419314720070R	C SMD(0805) X7R 4700PF/50V K ROHS	DARFON,TDK,WALSIN,YAGEO,	2	C811,C8

80	419314720010R	C SMD(0402) X7R 4700PF/50V K ROHS	DARFON,TDK,WALSIN,YAGEO,	2 C813,C8
90	419314730070R	C SMD(0805) X7R 0.047uF/50V K ROHS	DARFON,TDK,WALSIN,YAGEO,	2 C872,C9
100	419311054070R	C SMD(0805) X7R 1uF/16V K RoHS REV:A	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	2 C897,C1
120	419311040070R	C SMD(0805) X7R 0.1uF/50V K RoHS REV:A	DARFON,TDK,WALSIN,YAGEO,	2 C951,C9
130	419311020070R	C SMD(0805) X7R 1000PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	1 C935,
140	419341069680R	C SMD(1210) Y5V 10uF/35V Z RoHS	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	1 C866,
140	419341069650R	C SMD (1206) Y5V 10UF/35V Z ROHS	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	0
150	419314710070R	C SMD(0805) X7R 470PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	1 C953,
160	410050069291R	XSTR AP9972GS N-CH TO-263(APEC)RoHS	APEC,	1 Q930,
170	410090010210R	XSTR PMBT2907A PNP SOT23(PHILI PS)RoHS	PHILIPS,	2 Q953,Q9
170	410090010090R	XSTR MMBT2907A PNP SOT23(PANJIT)RoHS	PANJIT,	0
180	410070010240R	XSTR MMBT4401 NPN SOT23(FAIRCHILD)RoHS	FAIRCHILD,	2 Q951,Q9
180	410070010420R	XSTR MMBT4401 NPN SOT23(PANJIT)RoHS	PANJIT,	0
180	410070010210R	XSTR PMBT4401 NPN SOT23(PHILIPS)RoHS	PHILIPS,	0
190	410500050212R	XSTR 2N7002K01 ESD N-C SOT-23(PHILIPS)R	PHILIPS,	2 Q861,Q8
190	410500050230R	XSTR RK7002 ESD N-C SOT-23 (ROHM)RoHS	ROHM,	0
190	410500050091R	XSTR 2N7002K ESD N-C SOT-23, (PEC)RoH	PANJIT,	0
200	411023004021R	DIO SN4148-LF 75V/0.15A SMD 1206 (FEC)Ro	FRONTIER,	2 D953,D9
200	411020046090R	DIO 1N4148W 75V/0.15A(PEC)RoHS SOD-123	PANJIT,	0
200	411020046310R	DIO 1N4148W-F 75V/0.15A(DIODES RoHS,SOD-	DIODES,	0
210	414908068350R	RES SMD (0805) 68KΩ J,RT,ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R813,
220	414908158210R	RES SMD (0805) 15.8KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R989,
230	414908240210R	RES SMD (0805) 24KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R814,R8
240	414908200010R	RES SMD (0805) 200Ω F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4 R825,R9
250	414908464210R	RES SMD (0805) 46.4KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R821,
260	414908105210R	RES SMD (0805) 10.5KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R829,R9
270	414908866210R	RES SMD (0805) 86.6KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	1 R860,
280	414918200210R	RES SMD (0402) 20KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R940,R9
290	414908680110R	RES SMD (0805) 6.8KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R969,
300	414908470110R	RES SMD (0805) 4.7KΩ F,RT,RoH S	TA-I,UNIOHM,WALSIN,YAGEO,	1 R864,
310	414918270110R	RES SMD (0402) 2.7KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R817,R8
320	414908100210R	RES SMD (0805) 10KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	R885,R8 12 R858,R9 R937,R9
340	414918100110R	RES SMD (0402) 1KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R816,
350	414908100110R	RES SMD (0805) 1KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	2 R943,R9
360	414908100010R	RES SMD (0805)100Ω F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R824,
370	414904100110R	RES SMD (1206) 1KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R931,
380	414904200910R	RES SMD (1206) 20Ω F,RT ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R854,R8
390	414908047150R	RES SMD (0805) 470Ω J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R942,R9
400	414904300310R	RES SMD (1206) 300KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	4 R831,R8
410	414904120410R	RES SMD (1206) 1.2MΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	4 R871,R8
420	414904020350R	RES SMD (1206) 20KΩ J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	5 R835,R8 R839,
430	414904499310R	RES SMD (1206) 499KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	8 R981,R9 R985,R9
440	414904374310R	RES SMD (1206)374KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4 R891,R8

450	414918100210R	RES SMD (0402) 10KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	3 R898,R9
460	414918392210R	RES SMD (0402) 39.2KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	1 R938,
470	414908047050R	RES SMD (0805) 47Ω J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R956,
480	414908100310R	RES SMD (0805) 100KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R958,
490	414908330010R	RES SMD (0805) 330Ω F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R964,
500	414908022250R	RES SMD (0805) 2.2KΩ J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2 R968,R8
510	414908200210R	RES SMD (0805) 20KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1 R967,
520	412000532021R	IC SG6901ASZ SOP20(SG)RoHS	SG,	1 U850,
530	412000453820R	IC LD7575PS SOP8(LEADTREND) RoHS	LEADTREND,	1 U950,
540	444099030040R	CON, SMD 1.0MM 30PIN with lock RoHS	CVILUX,P-TWO,	1 CN103,
550	419351044010R	C SMD(0402) X5R 0.1uF/16V K,RoHS	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	65 C104,C1 C110,C1 C126,C1 C135,C1 C139,C1 C144,C1 C149,C1 C156,C1 C165,C1 C170,C1 C174,C1 C207,C2 C211,C2 C304,C3 C316,C3 C320,C3 C326,
570	419314734010R	C SMD(0402) X7R 0.047uF/16V K,RoHS	DARFON,TDK,WALSIN,YAGEO,	7 C113,C1 C120,C1
580	419302700510R	C SMD(0402) NPO 27PF/50V J RoHS	DARFON,TDK,WALSIN,YAGEO,	2 C130,C1
590	419351054060R	C SMD(0603) X5R 1uF/16V K,RoHS	DARFON,MURATA, TAIYO,TDK,WALSIN,YAGEO,	2 C148,C3
600	419302200510R	C SMD(0402) NPO 22PF/50V J,RoHS	DARFON,TDK,WALSIN,YAGEO,	4 C157,C1
610	411020026210R	DIO BAV99 350mW 70V SOT-23(PHI RoHS	PHILIPS,	13 D102,D1 D202,D2 D206,D2 D210,
610	411020026090R	DIO BAV99 350mW 75V SOT-23(PEC RoHS	PANJIT,	0
610	411020026020R	DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS	FRONTIER,	0
620	411020047210R	DIO BAV70 85V SOT23 (PHILIPS) RoHS	PHILIPS,	2 D106,D2
620	411020047090R	DIO BAV70, 70V SOT-23(PEC) ROHS	PANJIT,	0
620	411020047020R	DIO BAV70-LF, 70V SOT-23(FEC) ROHS	FRONTIER,	0
630	432002312144R	BEAD CORE SMD(0603)120Ω 300mA SBK160808	CHILISIN,TAI-TECH,	1 FB101,
640	432002360140R	BEAD CORE SMD(0603)60Ω 600mA, GBK160808	CHILISIN,TAI-TECH,	2 FB102,F
650	410500068290R	XSTR AP2305GN P-CH SOT23(APEC) RoHS	APEC,	2 Q101,Q3
650	410500075270R	XSTR AO3415 P-CH,SOT23(AOS) RoHS	AOS,	0
650	410060018380R	XSTR AM2321P-T1-PF P-CH SOT23(ANALOG POW	AP,	0
660	410500045210R	XSTR PMBT3904 NPN 200MA,40V SOT23(PHILIP	PHILIPS,	6 Q104,Q1 Q302,Q3

660 410500045140R	XSTR MMBT3904LT1G NPN 200MA 40V SOT23(ON	ON SEMI,	0	
660 410500045090R	XSTR MMBT3904 NPN SOT-23(PANJIT)RoHS	PANJIT,	0	
670 410500046210R	XSTR PMBT3906 PNP 200MA,40V SOT23(PHILIP	PHILIPS,	2	Q107,Q1
670 410500046090R	XSTR MMBT3906 PNP SOT-23(PANJIT)RoHS	PANJIT,	0	
670 410500046180R	XSTR MMBT3906LT1G PNP 200mA 40V SOT23(ON	ON SEMI,	0	
680 414916000050R	RES SMD (0603) 0Ω J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4	RB101,F R164, R102,R1 R151,R1 R171,R1 R179,R1
690 414918010350R	RES SMD (0402) 10KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	36	R213,R2 R184,R1 R312,R3 R322,R1 R189,R1
700 414918000050R	RES SMD (0402) 0Ω J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	3	R147,R1 R127,R1
710 414918047250R	RES SMD (0402) 4.7KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	9	R188,R2 R157,
720 414918010450R	RES SMD (0402)100KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	6	R109,R1 R308,R3
730 414918027350R	RES SMD (0402) 27KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	3	R107,R3 R117,R1
740 414918750910R	RES SMD (0402) 75Ω F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	9	R115,R1 R124,
750 414918047150R	RES SMD (0402) 470Ω J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R159,
760 414918010250R	RES SMD (0402) 1KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	8	R133,R1 R155,R1 R131,R1
770 414918010150R	RES SMD (0402) 100Ω J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	9	R209,R2 R158,
780 414918022250R	RES SMD (0402) 2.2KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2	R135,R1
790 414918390010R	RES SMD (0402) 390Ω F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R144,
800 414916033150R	RES SMD (0603) 330Ω J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2	R165,R1
810 414918010050R	RES SMD (0402) 10Ω J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	8	R201,R2 R205,R2
820 412000332130R	IC AP1117D33LA 3.3V (ANACHIP) TO-252-3L,	ANACHIP,	1	U101,
820 412000332830R	IC AS1117R-3.3.TR-LF,TO-252(A1 SEMI)RoHS	A1SEMI,	0	
830 412000330020R	IC LD1117AL-1.8V-A SOT223(UTC) RoHS	UTC,	1	U102,
830 412000330830R	IC AS1117L-1.8/TR-LF,SOT223(A1 SEMI)RoHS	A1SEMI,	0	
830 412000330070R	IC AZ1117H-1.8 SOT223(AAC)RoHS	BCD,	0	
840 412000435481R	IC AT24C02BN-SH-T 2K SOIC8(ATMEL)RoHS	ATMEL,	2	U103,U2
840 412000480280R	IC M24C02-RMN6TP SO8(ST)RoHS	ST,	0	
840 412000480990R	IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS	CATALYST,	0	
850 412000653060R	IC TSUMU58EHJ-LF-2 PQFP128(MSTAR)Rohs	MSTAR,	1	U105,
860 412000224482R	IC AT24C16BN-SH-T 16K(ATMEL) SOIC 8 ROHS	ATMEL,	1	U106,
860 412000224280R	IC M24C16-WMN6TP SO8 16K (ST) ROHS	ST,	0	

860	412000481990R	IC CAT24C16WI-TE13 SOIC-8(CATALYST)RoHS	CATALYST,	0	
870	412000494190R	IC SST25LF020A-33-4C-SAE SOIC8(SST)ROHS	SST,	1	U108,
870	412000661620R	IC MX25L2025MC-12G (MXIC)RoH	MXIC,	0	
870	412000494310R	IC PM25LV020-100SCE SOIC8(PMC)RoHS	PMC,	0	
880	411130962950R	ZENER 6.2V MMSZ5234B SOD-123(PANJIT)RoH	PANJIT,	10	ZD102,Z ZD105,Z ZD203,Z
880	411121462950R	ZENER 6.2V BZT52-C6V2 SOD-123(WILLAS)ROH	WILLAS,	0	ZD202,
880	411131562950R	ZENER 6.2V BZT52C6V2-7-F SOD-123(DIODES)	DIODES,	0	
890	491881200100H	PCB,M/B ,2/OSP /FR4 /12,LP2236,HF	EXPRESS,HSIANGKUO,	1	
900	414918033450R	RES SMD(0402) 330KΩ J,RT ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R303,
910	414918010550R	RES SMD (0402) 1MΩ J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4	R311,R1
920	432002312113R	BEAD CORE SMD(0805)120Ω 3A PBY201209T-1	CHILISIN,MAGLAYERS,TAI-TECH,	4	FB308,F FB311,F
930	432002330142R	BEAD CORE SMD(0603)300Ω 2A PBY160808T-3	CHILISIN,TAI-TECH,	2	FB306,F
940	425000010720R	CHOKE COM.MODE SMD 90Ω ,RoHS	CHILISIN,FRONTIER,TAI-TECH,	5	FB301,F FB304,F
950	414918120210R	RES SMD (0402) 12KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R310,
960	414918015350R	RES SMD (0402) 15KΩ J,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	5	R313,R3 R319,R1
970	412000668390R	IC USB2514-AEZG 36QFN(SMSC)	SMSC,	1	U302,
980	432009300900R	PTC 750mA SMD1206 1206L075YR,ROHS	LITTELFUSE,	4	FS310,F FS312,F
990	412000372020R	IC LD1117AL-3.3V-A SOT-223(UTC RoHS	UTC,	1	U301,
990	412000372830R	IC AS1117L-3.3TR-LF,SOT223(A1S EMI)RoHS	A1SEMI,	0	
990	412000372070R	IC AZ1117H-3.3 SOT-223(AAC)RoHS	BCD,	0	
990	412000598990H	IC EC50117KBG 3.3V SOT223(E-CMOS)	E-CMOS,	0	
1000	506140005700R	LABEL,BARCODE,BLANK,33x7mm, ROHS,FOR PCB	HENGMINGDA,JIAYINMEI,KAIDA,	1	
1010	511130002200R	SOLDER PASTE,Sn96.5-Ag3.0-Cu0.5 ROHS	TOMAS,	0.5	
1010	511130002201R	SOLDER PASTE,Sn96.5%Ag3.0%Cu0.5%	TOMAS,	0	
1010	511130002202R	SOLDER PASTE,Sn95.5%Ag3.9%Cu0.6%	TAMURA,	0	

2. invert board BOM

ITEM	P/N	Description	Supplier	Usage	Lo
	791922200A00R	PCBA,INVERTER/B.,W/O SPK,LP2236-A19,ROHS			
10	444179001010R	CONN SPRING H/V 1P ROHS	FOXCONN,	12	P1 P6
20	430631100070R	WFR 10P 2.0MM 90° SMD W/LOCK ROHS	CVILUX,FCN,JOWLE,	1	P1 CN
30	419341050670R	C SMD(0805) Y5V 1UF/50V Z ROHS	DARFON,MURATA,SAMSUNG, TAIYO,TDK,WALSIN,YAGEO,	1	C4
40	419304710560R	C SMD(0603) NPO 470PF/50V,J,RoHS	MURATA,TAIYO,TDK,WALSIN,YAGEO,	4	C3

50	419312254070R	C SMD(0805) X7R 2.2uF 16V K RoHS	DARFON,MURATA,SAMSUNG, TAIYO,TDK,WALSIN,YAGEO,	3 C3
50	419352254070R	C SMD(0805) X5R 2.2uF/16V K, RoHS	DARFON,MURATA,SAMSUNG, TAIYO,TDK,WALSIN,YAGEO,	0
60	419311020060R	C SMD(0603) X7R 1000PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	3 C1
70	419312220060R	C SMD(0603) X7R 2200PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	6 C5 C5
80	419341069680R	C SMD(1210) Y5V 10uF/35V Z RoHS	MURATA,SAMSUNG,TDK,	5 C6
90	421024700350R	CAP OS SVPD 47UF 35V M,125 ℃ SMD 10X13	SANYO,	1 C5
100	419311044060R	C SMD(0603) X7R 0.1uF/16V,K RoHS	DARFON,TDK,WALSIN,YAGEO,	3 C2
110	419308200560R	C SMD(0603) NPO 82PF/50V,J,RoHS	DARFON,TDK,WALSIN,YAGEO,	1 C1
120	419314723060R	C SMD(0603) X7R 4700pF/25V K RoHS	DARFON,TDK,WALSIN,YAGEO,	1 C1
130	419314734060R	C SMD(0603) X7R 0.047uF/16V K,RoHS	DARFON,TDK,WALSIN,YAGEO,	1 C1
140	419314743070R	C SMD(0805) X7R 0.47uF/25V K RoHS	DARFON,TDK,WALSIN,YAGEO,	2 C2
150	419313330060R	C SMD(0603) X7R 0.033uF/50V K ROHS	DARFON,TDK,WALSIN,YAGEO,	6 C4 C5
160	419311010060R	C SMD(0603) X7R 100PF/50V K RoHS REV:A	DARFON,TDK,WALSIN,YAGEO,	6 C6 C6
180	419311040070R	C SMD(0805) X7R 0.1uF/50V K RoHS REV:A	DARFON,MURATA,SAMSUNG, TDK,WALSIN,YAGEO,	2 C9
190	411020047020R	DIO BAV70-LF, 70V SOT-23(FEC) ROHS	FRONTIER,	6 D7 D1
190	411020047090R	DIO BAV70, 70V SOT-23(PEC) ROHS	PANJIT,	0
200	411090046090R	SCHTKY BAT54A, SOT-23(PEC)	PANJIT,	7 D1 D1
200	411090046040R	SCHTKY BAT54A, SOT-23(MOSPEC)	MOSPEC,	0
200	411090046020R	SCHTKY BAT54A,-LF30V/200mA SOT-23(FEC)	FRONTIER,	0

210 411020026210R	DIO BAV99 350mW 70V SOT-23(PHI RoHS	PHILIPS,	12	D1 D2 D2
210 411020026020R	DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS	FRONTIER,	0	
210 411020026090R	DIO BAV99 350mW 75V SOT-23(PEC RoHS	PANJIT,	0	
220 410050108290R	XSTR AP9962AGH,N-CH,TO252(APEC) RoHS	APEC,	4	Q1
220 410050108430R	XSTR P1504BDG,N-CH,TO252(NIKO) RoHS	NIKO,	0	
230 410500050230R	XSTR RK7002 ESD N-C SOT-23 (ROHM)RoHS	ROHM,	2	Q5
230 410500050120R	XSTR 2N7002K ESD N-C SOT-23, (VISHAY)RoH	VISHAY,	0	
230 410500050212R	XSTR 2N7002K01 ESD N-C SOT-23(PHILIPS)R	PHILIPS,	0	
240 414916620310R	RES SMD (0603) 620KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R6
250 414916010350R	RES SMD (0603) 10KΩ J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	6	R3 R3 R2
260 414916100310R	RES SMD (0603) 100KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	14	R2 R2 R3
270 414916330210R	RES SMD (0603) 33KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R5
280 414916301210R	RES SMD(0603) 30.1KΩ F,RT ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	13	R7 R7 R7 R7
290 414916010550R	RES SMD (0603) 1MΩ J,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	2	R1
300 414916750310R	RES SMD (0603) 750KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R9
310 414908100910R	RES SMD(0805)10Ω F,RT ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R1
320 414908220910R	RES SMD (0805) 22Ω F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4	R3

330	414916243310R	RES SMD (0603) 243KΩ F,RT ROHS	TA-I,WALSIN,YAGEO,	1	R1
340	414916330410R	RES SMD (0603) 3.3M F RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R1
350	414916051250R	RES SMD (0603) 5.1KΩ J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4	R1
360	414916390210R	RES SMD (0603) 39KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	R1
370	414916100110R	RES SMD (0603) 1KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	1	R4
380	414916140110R	RES SMD (0603) 1.4KΩ F,RT,RoH S	TA-I,UNIOHM,WALSIN,YAGEO,	6	R5 R6
390	414916590010R	RES SMD (0603) 590Ω F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	6	R5 R6
400	412000689630R	IC OZ9926AGN SOIC24(O2 MICRO)RoHS	O2,	1	U1
410	491882200100H	PCB,INV ,2/OSP /FR4 /12,LP2236,HF	EXPRESS,HSIANGKUO,	1	
420	411020046310R	DIO 1N4148W-F 75V/0.15A(DIODES RoHS,SOD-	DIODES,	1	D2
420	411020046090R	DIO 1N4148W 75V/0.15A(PEC)RoHS SOD-123	PANJIT,	0	
420	411020046411R	DIO MWS4148-G 75V/0.15A,SOD-123(MMC)RoHS	MMC,	0	
430	426000091270R	XFMR SW SMD EE13 P4 300mH SPW-127 ROHS	DARFON,HUALON,LISHIN,	12	T1, T6, T1
440	505040209902R	INVERT-MYALR,LP2236	Fuzhen(富准)	1	
450	419302710560R	C SMD(0603) NPO 270PF/50V J RoHS REV:A	DARFON,TDK,WALSIN,YAGEO,	12	C3 C4 C4
460	414916330110R	RES SMD (0603) 3.3KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,UNIOHM	1	R4
470	414916360110R	RES SMD (0603) 3.6KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,UNIOHM	4	R4
480	414916430110R	RES SMD (0603) 4.3KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,UNIOHM	5	R4 R5
490	414916390110R	RES SMD (0603) 3.9KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,UNIOHM	1	R4
500	414916470110R	RES SMD (0603) 4.7KΩ F,RT	TA-I,WALSIN,YAGEO,UNIOHM	1	R5

		RoHS		

3. keypad BOM

ITEM	P/N	Description	Supplier	Usage	Un
	791921500000R	PCBA,KEYPAD BOARD,LP2236-A19 ROHS			
10	430602680280R	SW,METAL DOME 180gf 5P ROHS	FOXCONN,HUA-JIE,	1	PC
20	430631080191R	WFR 8P 1.25MM 180° W/LOCK ROHS	JOWLE,	1	
20	430631080190R	WFR 8P 1.25MM 180° W/LOCK ROHS	FOXCONN	0	PC
30	791921540000R	PCBA,KEYPAD BOARD,SMT,LP2236-A19 ROHS		1	PC

ITEM	P/N	Description	Supplier	Usage	Un
	791921540000R	PCBA,KEYPAD BOARD,SMT,LP2236-A19 ROHS			
10	411070093500R	LED SMD YB KPTB-1612FX151-SZ(Kingbright)	KINGBRIGHT,	1	PC
10	411070094500R	LED SMD YB HTL-19-22UYUBC/TR8(HongTong)R	HONGTONG,	0	PC
20	491881500000H	PCB,K/P ,2/ENIG/FR4 /08,LP2236,HF	EXPRESS,HSIANGKUO,	1	PC

4. USB convert board BOM

ITEM	P/N	Description	Supplier	Usage	Un
	791860300000R	PCBA,CONVERT/B(USB) W/O SPK,LP1931,ROHS			
10	430631080210R	WFR 8P 2.0MM 90° W/LOCK ROHS	FOXCONN,JOWLE,	1	PC
20	420421010481R	CAP SD 100uF 16V M,105 ℃,CF,5x11,RoHS,2.	CAPXON,SU'SCON,TEAPO,	2	PC
30	442849001060R	CON USB A,R/A,4 POS,UB11123-4R1-4F,RoHS	TEKCON,FOXCONN,	2	PC
40	511130001200R	SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0	TOMAS,	0.698	G
60	491660300100H	PCB,CNV-U,1/OSP /CEM1/12,LP1931 HF	HSIANGKUO,TATCHUN,	1	PC

6. Assembly BOM

ITEM	P/N	Description	Supplier
	822236A1D010R	2209WAf/H736H/LP2236-A19/LGD/DAO	
10	453010100320R	CABLE D-SUB 15P MALE 6FT BLACK/BLUE AB 8	FOXCONN,HOTRON,JVE,廣宇,
20	453030300440R	CABLE DVI-D 18+1P MALE 1.8M BLACK ROHS	FOXCONN,HOTRON,JVE,廣宇,

30	453030300230R	CABLE USB 2.0 2M BLACK RoHS	FOXCONN,GREATLANE,廣宇,
40	453070800150R	PWR CORD 10A/125V BLK 6FT UL/CSA SVT 3Cx	FOXCONN,I-SHENG,
50	7140793A2000R	ASSY,FINAL(B)W/OSPK,LP2236-A19(2209WAf)	
60	713100009900R	ASSY, PACKAGE, PACK, DAO,LP2236	

ITEM	P/N	Description	Supplier
	713100009900R	ASSY, PACKAGE, PACK, DAO,LP2236	
10	506140006500R	LABEL,BARCODE, LP2236	高綺,鍵升,
20	506250027700R	LABEL,AGENCY,TCO 03 LP2236	高綺,鍵升,
30	506431005200R	FILM,SCREEN,PROTECTION,PRINTED,LE22E0	柏興,鴻旺,
40	506380001400R	TAPE 3M-897 12x45000mm	久威,矽威,
50	506280008210R	POSTER,QUICK SETUP,WEST, LP2236	裕同,鴻達,
60	703500010000R	KIT,ACCESSORY, DOC, DAO, LP2236	裕同,鴻達,
70	506120300060R	BAG, PLASTIC,L670*W440mm(PRINTED), LE22E	柏興,鴻旺,
80	506120301810R	BAG,EPE+HDPE,L800/400XW450MM,LP1X03	柏興,鴻旺,
90	506060012720R	Cushion for Stand,LP2236	東揚,
100	506020029700R	CARTON,DELL(WWW), LP2236	佳藝,美盈森,
110	506060012710R	CUSHION TOP,LP2236	東揚,
120	506060012700R	CUSHION BOTTOM,LP2236	東揚,
130	506340004700R	LABEL BLANK 101X50mm DELL EMEA CARTON	高綺,鍵升,
140	506380002622R	TAPE, WRAPPING TYPE PRINTED(DELL), BLACK	佳普森,
150	713010005602R	ASSY PACK,40HQ,LP2236	
150	713010005600R	ASSY PACK,20STD,LP2236	
150	713010005601R	ASSY PACK,40STD,LP2236	
150	713010005603R	ASSY PACK,AIR/JAPAN CARGO (20STD),LP2236	
150	713010005604R	ASSY PACK,AIR/JAPAN CARGO(40STD),LP2236	

ITEM	P/N	Description	Supplier
	7140793A2000R	ASSY,FINAL(B)W/OSPK,LP2236-A19(2209WAf)	
10	509212103500R	SCREW,F,CROSS,T.T-2*3,BLK	高億,
20	509116610510R	SCREW,P,CROSS,M4*10,BLACK-NL(NYLOK)	立侑,高億,
30	506250024300R	LABEL, CARD,LP1931	MMP,
40	714050019001R	ASSY BACK COVER ,LP2236,SILVER	MMP,
50	714020016000R	ASSY STAND ,LP2236	銘異,
60	714030020200R	ASSY,FRONT,BEZEL,LP2236,Black	MMP,
70	7140893A2000R	ASSY,PANEL,W/OSPK,LP2236-A19(2209WAf)	

ITEM	P/N	Description	Supplier
	713010005600R	ASSY PACK,20STD,LP2236	

10	506432000600R	SLIP SHEET,L1370xW880mm,LE1711	SUNSTREAM,
20	506037011200R	CARDBOARD,COVER,L1224xW880xH100xT3mm,LP2	佳藝,美盈森,
30	506039006900R	CORNER PAPER 950x50x50xT3mm LE1712	佳藝,金惠,
40	506039006200R	CORNER PAPER 1100x50x50xT3mm LE1513 ROH	佳藝,金惠,
50	506431000300R	FILM,PE 500mmx900M ROHS	三輝,柏興,
60	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm	佳普森,

ITEM	P/N	Description	Supplier
	713010005601R	ASSY PACK,40STD,LP2236	
10	506432000600R	SLIP SHEET,L1370xW880mm,LE1711	SUNSTREAM,
20	506037011200R	CARDBOARD,COVER,L1224xW880xH100xT3mm,LP2	佳藝,美盈森,
30	506039006900R	CORNER PAPER 950x50x50xT3mm LE1712	佳藝,金惠,
40	506039006200R	CORNER PAPER 1100x50x50xT3mm LE1513 ROH	佳藝,金惠,
50	506431000300R	FILM,PE 500mmx900M ROHS	三輝,柏興,
60	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm	佳普森,

ITEM	P/N	Description	Supplier
	713010005602R	ASSY PACK,40HQ,LP2236	
10	506432000600R	SLIP SHEET,L1370xW880mm,LE1711	SUNSTREAM,
20	506037011200R	CARDBOARD,COVER,L1224xW880xH100xT3mm,LP2	佳藝,美盈森,
30	506039006200R	CORNER PAPER 1100x50x50xT3mm LE1513 ROH	佳藝,金惠,
40	506039010000R	CORNER PAPER, L1350X50X50XT3MM,LP1716	金惠,
50	506431000300R	FILM,PE 500mmx900M ROHS	三輝,柏興,
60	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm	佳普森,

ITEM	P/N	Description	Supplier
	713010005603R	ASSY PACK,AIR/JAPAN CARGO (20STD),LP2236	
10	506150006900R	PALLET L1284xW914xH120mm LE1746	實習工廠,
20	506037011200R	CARDBOARD,COVER,L1224xW880xH100xT3mm,LP2	佳藝,美盈森,
30	506039008700R	CORNER PAPER 900x50x50xT3mm LP1704	金惠,
40	506039001400R	CORNER PAPER 200x50x50mm ROHS	佳藝,金惠,
50	506431000300R	FILM,PE 500mmx900M ROHS	三輝,柏興,
60	506120400100R	BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS	SISUN,
70	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm	佳普森,

ITEM	P/N	Description	Supplier
	713010005604R	ASSY PACK,AIR/JAPAN CARGO(40STD),LP2236	
10	506150006900R	PALLET L1284xW914xH120mm LE1746	實習工廠,
20	506037011200R	CARDBOARD,COVER,L1224xW880xH100xT3mm,LP2	佳藝,美盈森,
30	506039008700R	CORNER PAPER 900x50x50xT3mm LP1704	金惠,

40	506039001400R	CORNER PAPER 200x50x50mm ROHS	佳藝,金惠,
50	506431000300R	FILM,PE 500mmx900M ROHS	三輝,柏興,
60	506120400100R	BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS	SISUN,
70	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm	佳普森,

ITEM	P/N	Description	Supplier
	714030020200R	ASSY,FRONT,BEZEL,LP2236,Black	
10	501010221100R	FRONT,BEZEL,LP2236,Black	MMP,
20	750020200600R	SUB-BUTTON,LP2236,BLACK	PCM,
30	501120109500R	POWER BUTTON LENS, LP2236, DARK SMOKED	HANHAI,
40	501110200400R	LOGO PLATE DELL UX383 LE1963	DEMETER,

ITEM	P/N	Description	Supplier
	714050019001R	ASSY BACK COVER ,LP2236,SILVER	
10	750030200500R	SUB-BACK COVER ,LP2236,Black	PCM,
20	501010221102R	Mid Frame,LP2236,Silver	MMP,
30	501030210502R	release-button,LE22F4	MMP,
40	502210100400R	KENSINGTON LOCK LE1963	MMP,
50	509012305000R	SCREW,I,CROSS,T.T-3*5,ZN-Cc,	鴻益進,
60	501110201100R	BACK COVER LOGO,LP2236,Silver	MMP,

ITEM	P/N	Description	Supplier
	7140893A2000R	ASSY,PANEL,W/OSPK,LP2236-A19(2209WAf)	
10	631102220560RD	LCP 22"LM220WE4-SLB1(A)(LGD)ROHS	
20	430303002030R	HRN LVDS FFC 30P 82MM	
30	430300802130R	HRN ASSY 2x4P to 8P 322mm UL1571#28	
40	701000011200R	ASSY CHASSIS-BTM, LP2236	
50	701000011201R	ASSY CHASSIS-TOP,LP2236	
60	502090313403R	USB-COVER,LP2236	
70	502090313404R	INVERT-CHASSIS,LP2236	
80	505040209900R	BTM-CHASSIS-MYLAR,LP2236	
90	505040209901R	TOP-CHASSIS-MYLAR,LP2236	
100	509000001000R	BOLT,#4-40x12.5,Ni ROHS	
110	509016304200R	SCREW,I,CROSS,M3*4,Zn-CcROHS	
120	509016306200R	SCREW,I,CROSS,M3*6,Zn-Cc	
130	509146306202R	SCREW,P,CROSS,W/WAS(7.8),M3*6,Zn-Cc	
140	509146610200R	SCREW,P,CROSS,W/WAS(8),M2*4,Zn-Cc	
150	791921200A00R	PCBA,MAIN BOARD,W/O SPK,LP2236-A19,ROHS	
160	791922200A00R	PCBA,INVERTER/B.,W/O SPK,LP2236-A19,ROHS	
170	791921500000R	PCBA,KEYPAD BOARD,LP2236-A19 ROHS	

180	791860300000R	PCBA,CONVERT/B(USB) W/O SPK,LP1931,ROHS	
190	511110000580R	SILICONE PAD,25*15*0.8mm,	
200	512004001200R	SPACER SUPPORT H4.0	
210	506381001710R	TAPE,ACE,W28*L15mm,LE1971	
220	503010006300R	RUBBER FOR INVERT,LP2236	

ITEM	P/N	Description	Supplier
	701000011200R	ASSY CHASSIS-BTM, LP2236	
10	502090313400R	CHASSIS-BTM,LP2236	
20	502090313401R	CHASSIS-SUPPORT,LP2236	
30	502120400300R	CLIP EMI GND(3) LP1702	

ITEM	P/N	Description	Supplier
	701000011201R	ASSY CHASSIS-TOP,LP2236	
10	502090313402R	CHASSIS-TOP,LP2236	
20	502020306000R	fix-plate-left,LE19E6	
30	502020306010R	fix-plate-right,LE19E6	
40	502040500100R	slide,LE22F4	
50	504010000300R	SPRING Φ0.5*D5*H17	
60	509112304100R	SCREW BTP3x4C3UC,ROHS	

ITEM	P/N	Description	Supplier
	750020200600R	SUB-BUTTON,LP2236,BLACK	
10	501030211500R	BUTTON,LP2236,BACK	MMP,

ITEM	P/N	Description	Supplier
	750030200500R	SUB-BACK COVER ,LP2236,Black	
10	501020225000R	BACK COVER ,LP2236,Black	MMP,

Attachment 2- Schematic

1. Main board schematic

2209Wa	
Title	page
1.0 Top level	1
2.0 contents	2
3.0 VGA input	3
4.0 DVI input	4
5.0 Scalar	5
6.0 USB	6
7.0 DC input	7
8.0 power	8

History
initial

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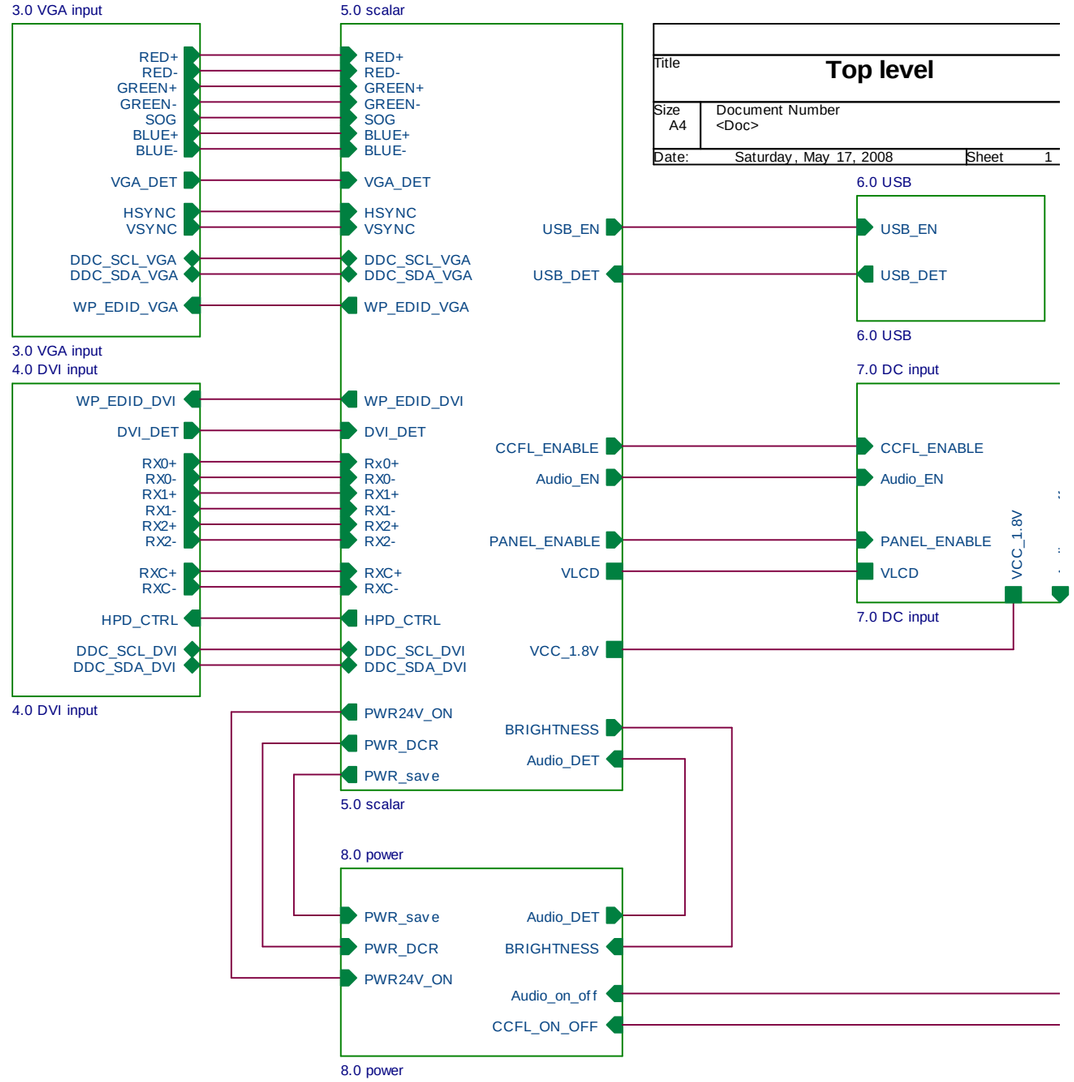
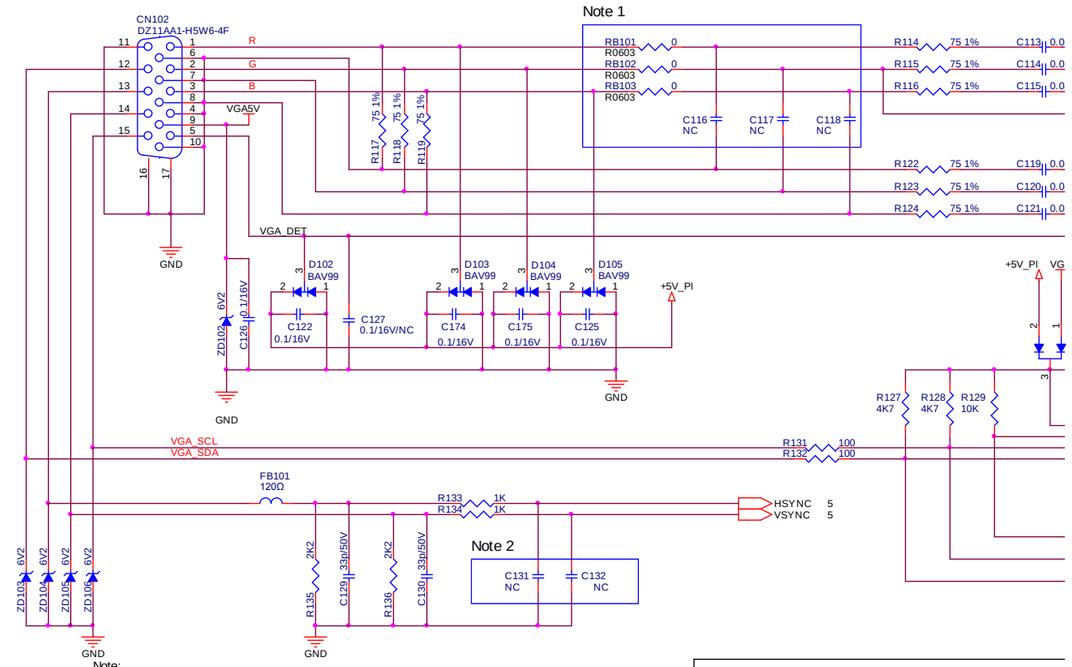
Size: A4	Document Number: <Doc>	Rev: V01
Date: Wednesday, September 10, 2008	Sheet 2 of 8	


3.0 VGA input
RED+
RED-
GREEN+
GREEN-
SOG
BLUE+
BLUE-
VGA_DET
HSYNC
VSYNC
DDC_SCL_VGA
DDC_SDA_VGA
WP_EDID_VGA
3.0 VGA input
5.0 scalar
RED+
RED-
GREEN+
GREEN-
SOG
BLUE+
BLUE-
VGA_DET
HSYNC
VSYNC
DDC_SCL_VGA
DDC_SDA_VGA
WP_EDID_VGA
Title
Top level
Size
A4
Document Number
<Doc>
Date:
Saturday, May 17, 2008
Sheet
1
6.0 USB
USB_EN
USB_DET
6.0 USB
4.0 DVI input
WP_EDID_DVI
DVI_DET
RX0+
RX0-
RX1+
RX1-
RX2+
RX2-
RXC+
RXC-
HPD_CTRL
DDC_SCL_DVI
DDC_SDA_DVI
4.0 DVI input
WP_EDID_DVI
DVI_DET
Rx0+
RX0-
RX1+
RX1-
RX2+
RX2-
RXC+
RXC-
HPD_CTRL
DDC_SCL_DVI
DDC_SDA_DVI
PWR24V_ON
PWR_DCR
PWR_save
5.0 scalar
BRIGHTNESS
Audio_DET
USB_EN
USB_DET
CCFL_ENABLE
Audio_EN
PANEL_ENABLE
VLCD
VCC_1.8V
7.0 DC input
CCFL_ENABLE
Audio_EN
PANEL_ENABLE
VLCD
VCC_1.8V
7.0 DC input
8.0 power
PWR_save
PWR_DCR
PWR24V_ON
Audio_DET
BRIGHTNESS
Audio_on_off
CCFL_ON_OFF
8.0 power

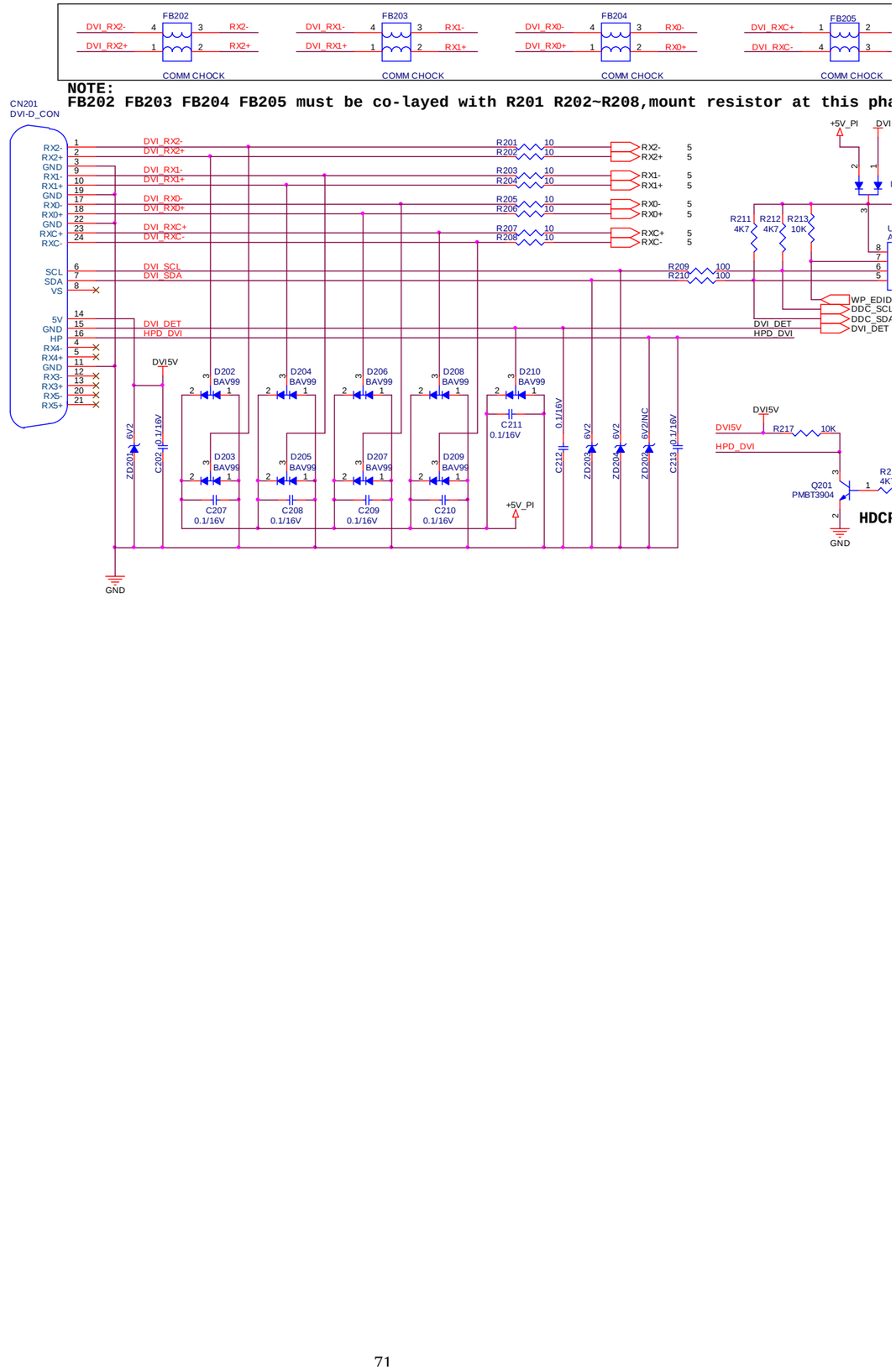


Note:

1. R0603 package for Bead. C116,C117,C118 10pF are reserved for EMI or performance issue.

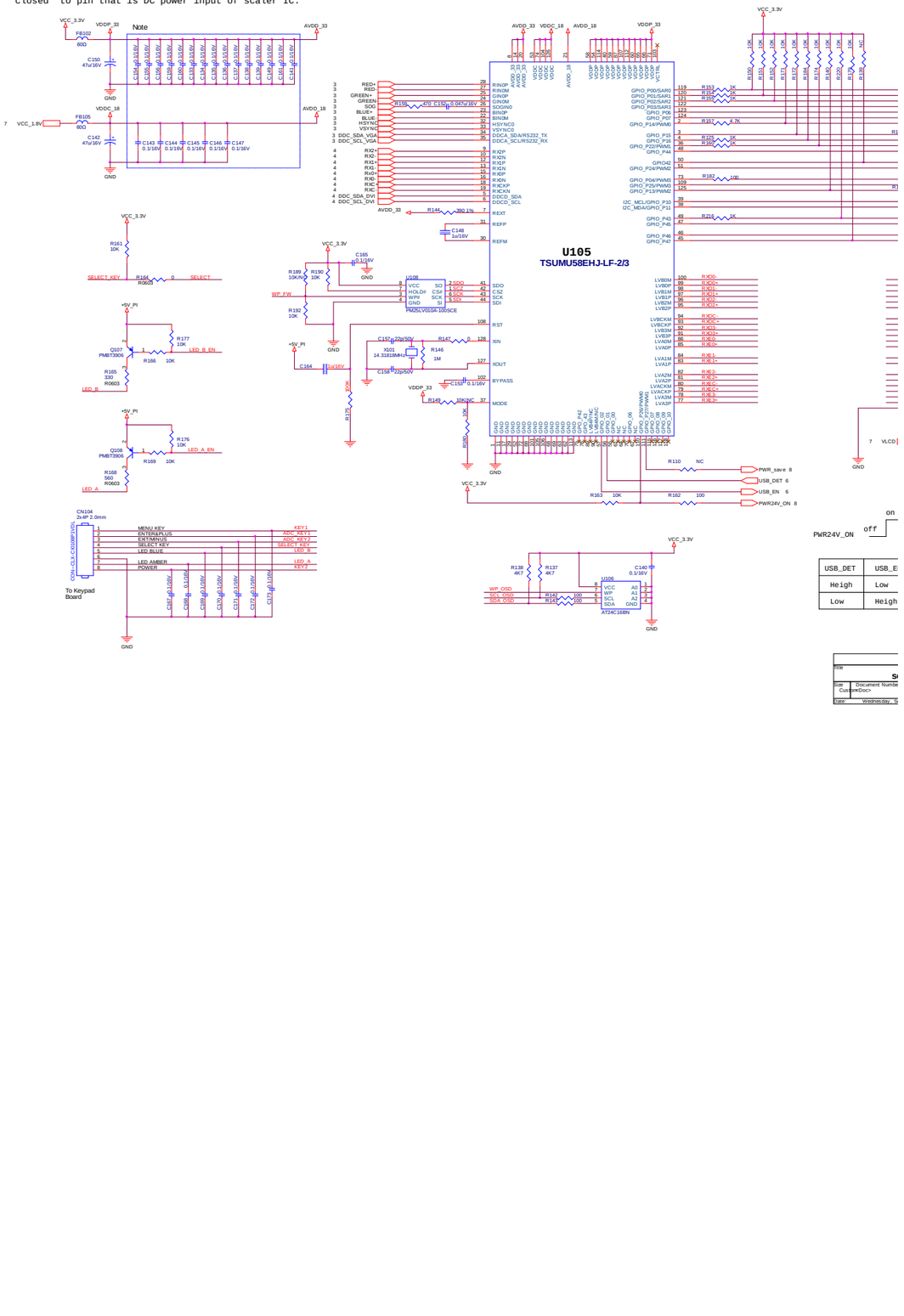
2. C131,C132 27P are reserved for tuning performance issue.

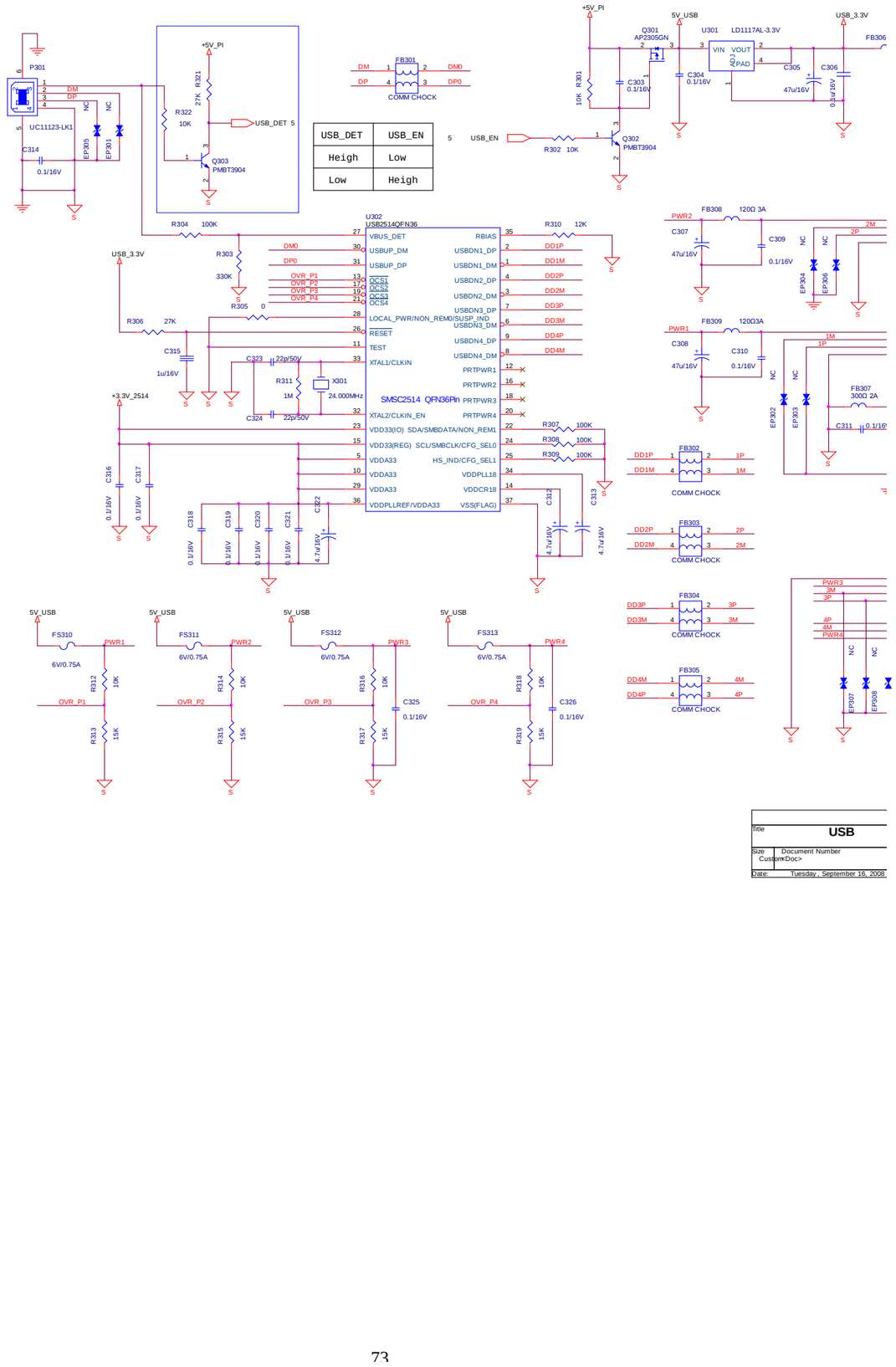
Title	VGA	
Size A4	Document Number <Doc>	
Date: Monday, August 04, 2008	Sheet 3 of 8	


FB202
DVI_RX2-
DVI_RX2+
RX2-
RX2+
COMM CHOCK
FB203
DVI_RX1-
DVI_RX1+
RX1-
RX1+
COMM CHOCK
FB204
DVI_RX0-
DVI_RX0+
RX0-
RX0+
COMM CHOCK
FB205
DVI_RXC+
DVI_RXC-
COMM CHOCK
NOTE:
FB202 FB203 FB204 FB205 must be co-layed with R201 R202~R208,mount resistor at this pha
CN201
DVI-D_CON
RX2-
RX2+
GND
RX1-
RX1+
GND
RX0-
RX0+
GND
RXC+
RXC-
SCL
SDA
VS
5V
GND
HP
RX4-
RX4+
GND
RX3-
RX3+
RX5-
RX5+
DVI_SCL
DVI_SDA
DVI_DET
HPD_DVI
R201
R202
R203
R204
R205
R206
R207
R208
R209
R210
R211
4K7
R212
4K7
R213
10K
+5V_PI
DVI5V
WP_EDID
DDC_SCL
DDC_SDA
DVI_DET
D202
D203
D204
D205
D206
D207
D208
D209
D210
BAV99
ZD201
ZD202
ZD203
ZD204
ZD205
6V2
6V2NC
C202
C207
C208
C209
C210
C211
C212
C213
0.1/16V
R217
10K
Q201
PMBT3904
GND

Service Manual

Note:
1. Each bypass capacitor (0.1u/16V) must be respectively closed to pin that is DC power input of scaler IC.





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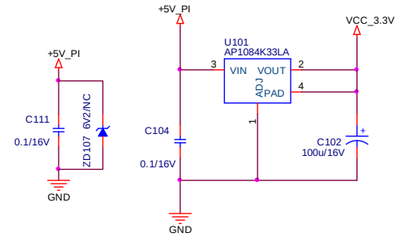
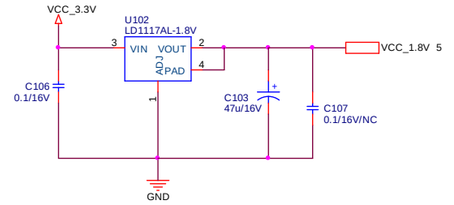
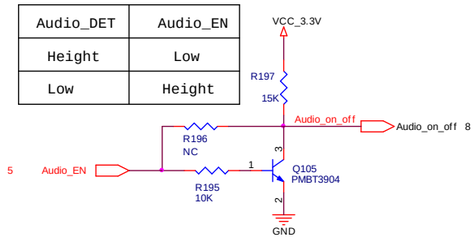
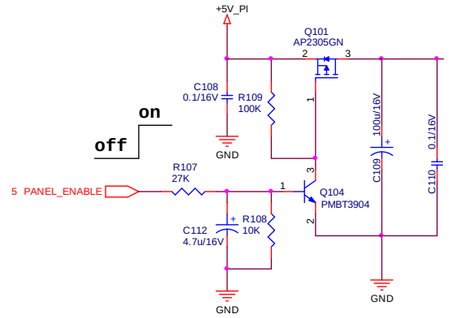




Audio_DET	Audio_EN
Height	Low
Low	Height





Note: See Table 1.

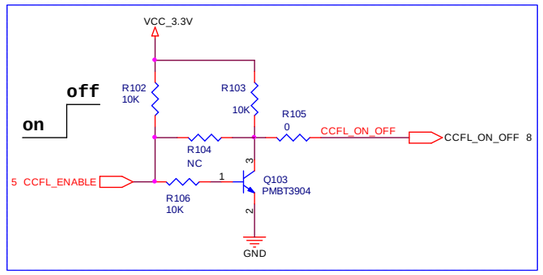
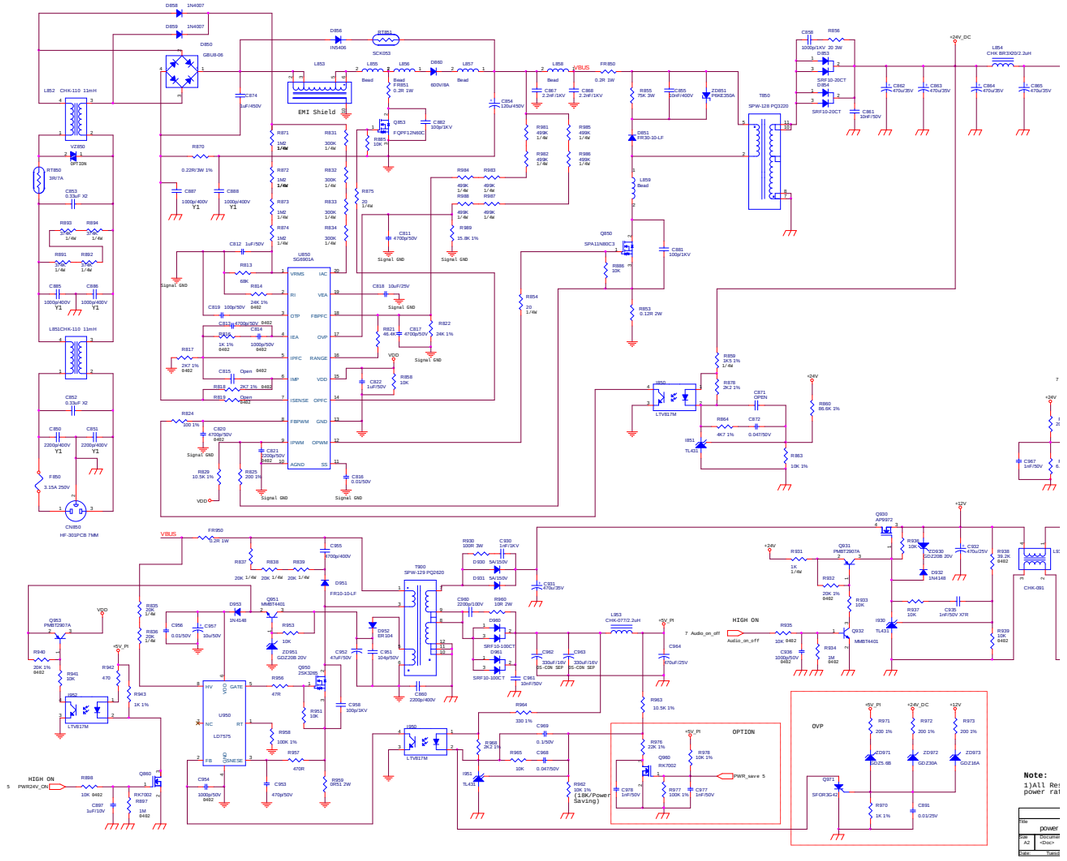


Table 1

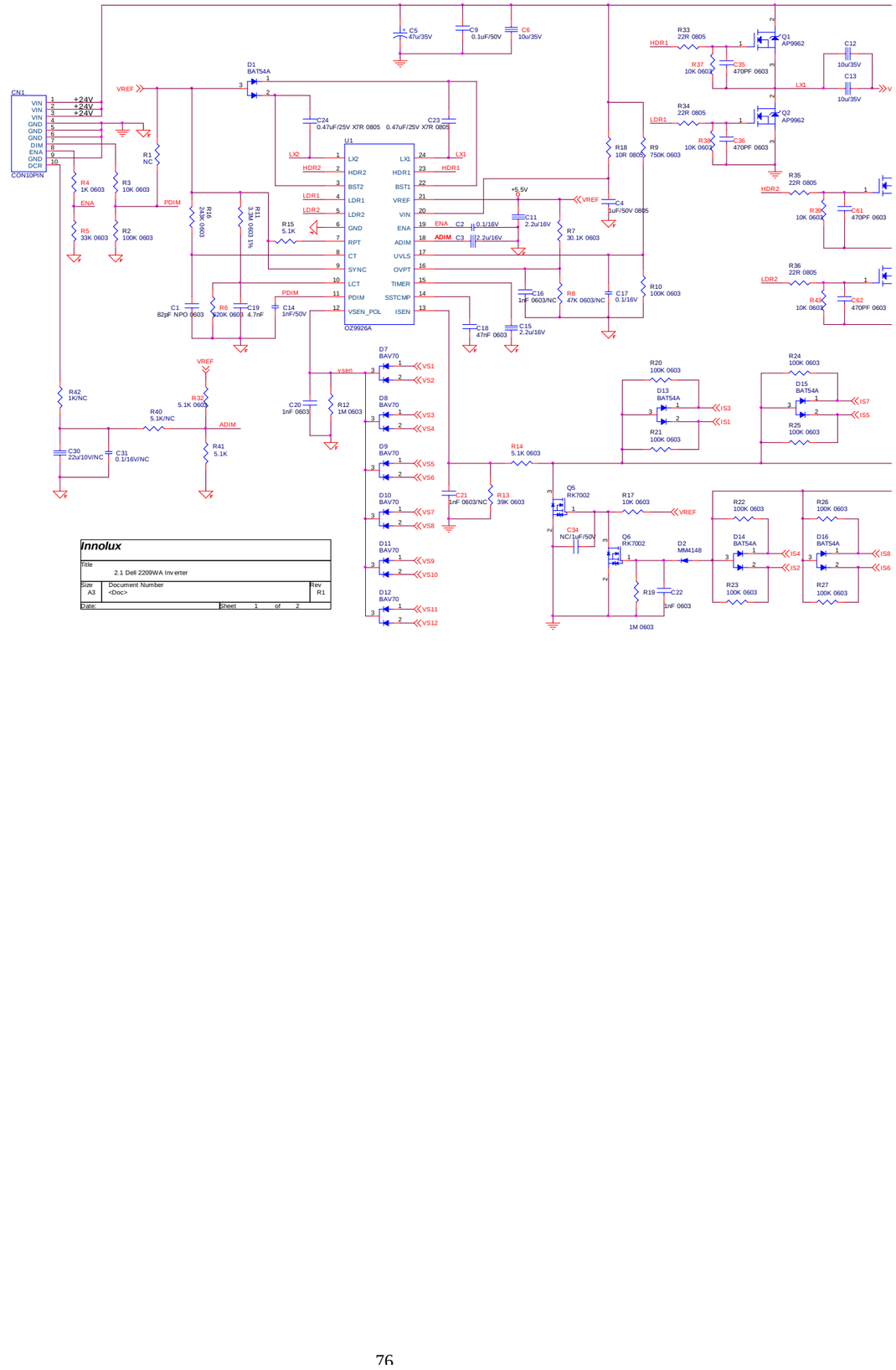
Backlight On/Off	Component Mount	No Connection
High Enable	R102,R103,R106,R105,Q103	R104,
Low Enable	R103,R104,R105	R102,,Q103,R106

Title	DC input	
Size A4	Document Number <Doc>	
Date:	Tuesday, September 16, 2008	She



E:\2209WA\proto1\
proto3\del2209wa_0

2. Invert board schematic


CN1
CON10PIN
VIN
GND
DIM
ENA
DCR
+24V
U1
OZ9926A
LX2
LX1
HDR1
HDR2
LDR1
LDR2
VREF
PDIM
ENA
ADIM
VSEN_POL
+5.5V
D1
BAT54A
D7
BAV70
D8
D9
D10
D11
D12
VS1
VS2
VS3
VS4
VS5
VS6
VS7
VS8
VS9
VS10
VS11
VS12
Q1
AP9962
Q2
Q5
RK7002
Q6
D2
MM4148
D13
D14
D15
D16
IS1
IS2
IS3
IS4
IS5
IS6
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IS8
Innolux
2.1 Dell 2209WA Inverter
Size
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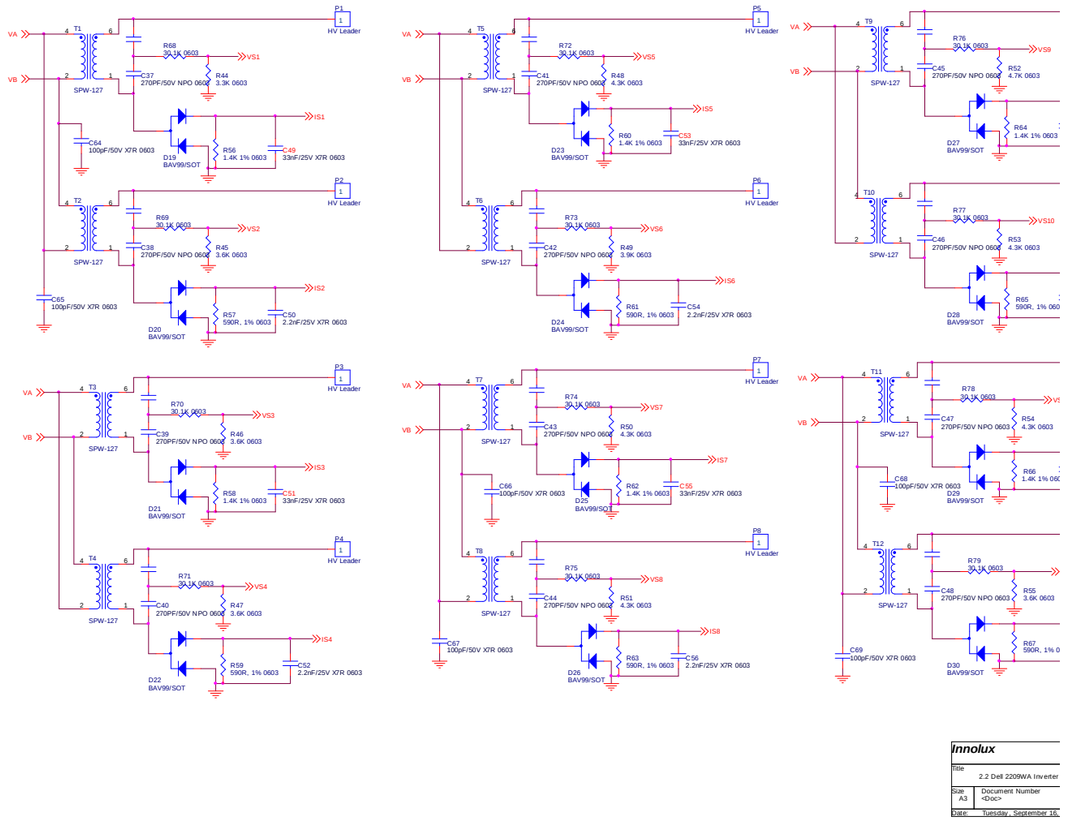
Rev
R1
Date:
Sheet 1 of 2



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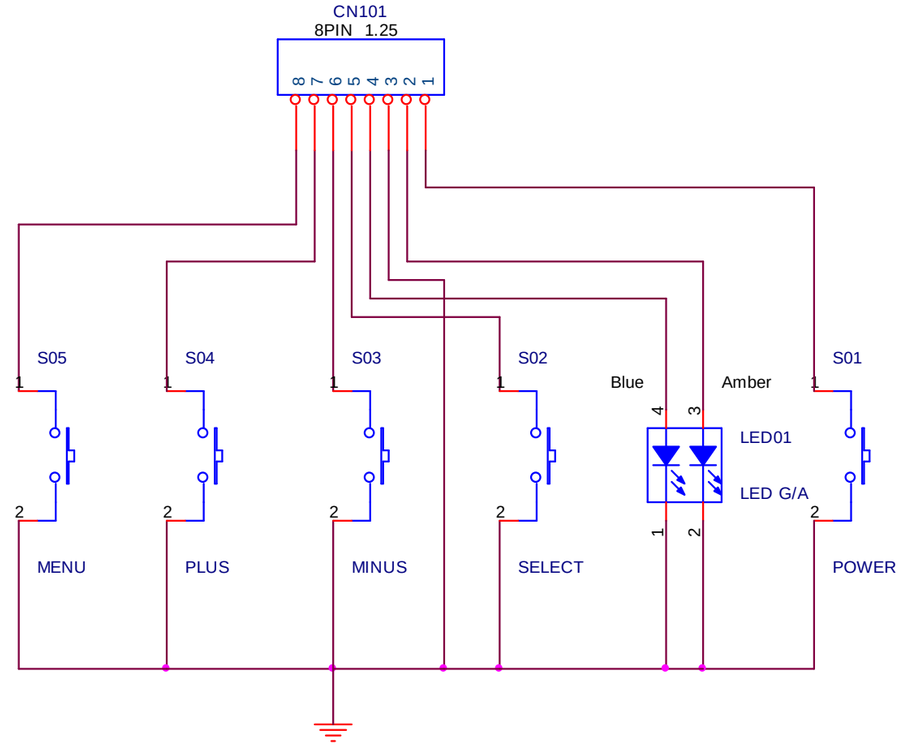
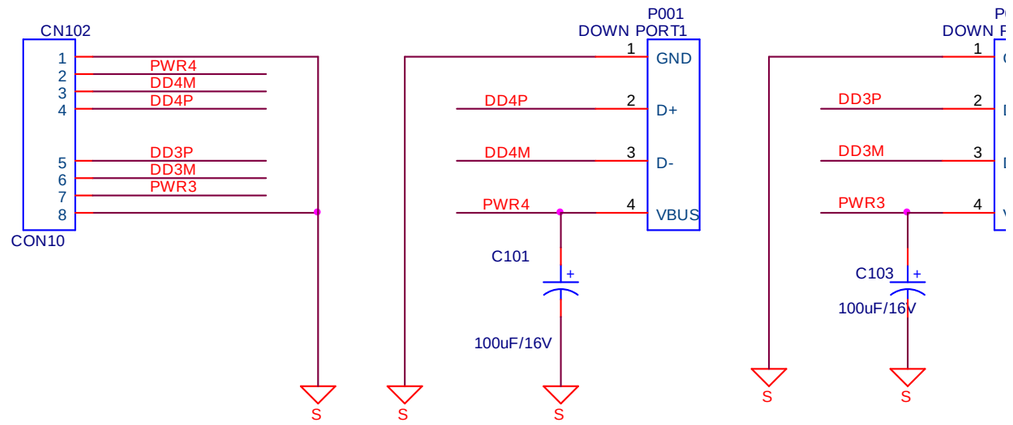
3. keypad schematic



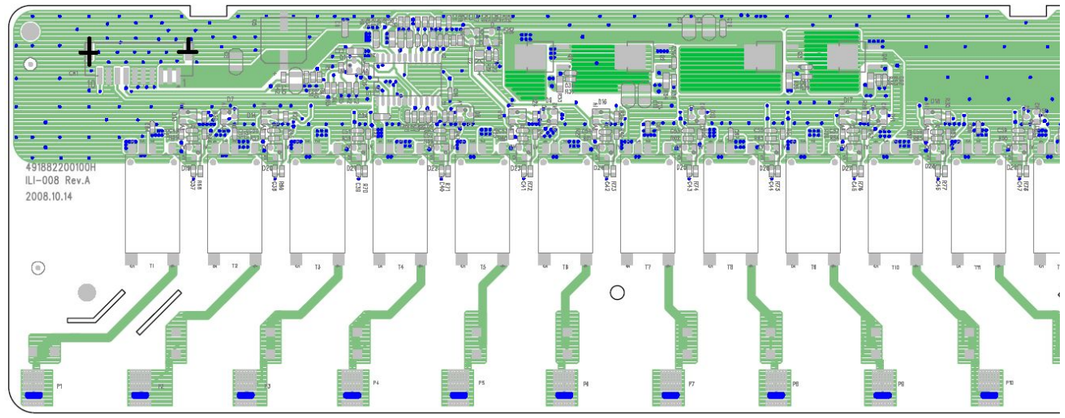
4. USB convert board schematic



Attachment 3- PCB Layout power/inverter bd:

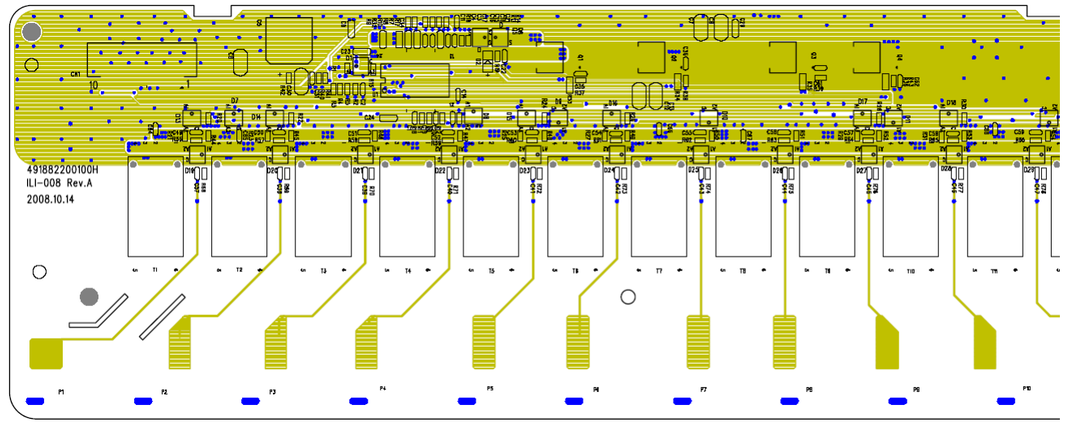
inverter board:

Top Layer



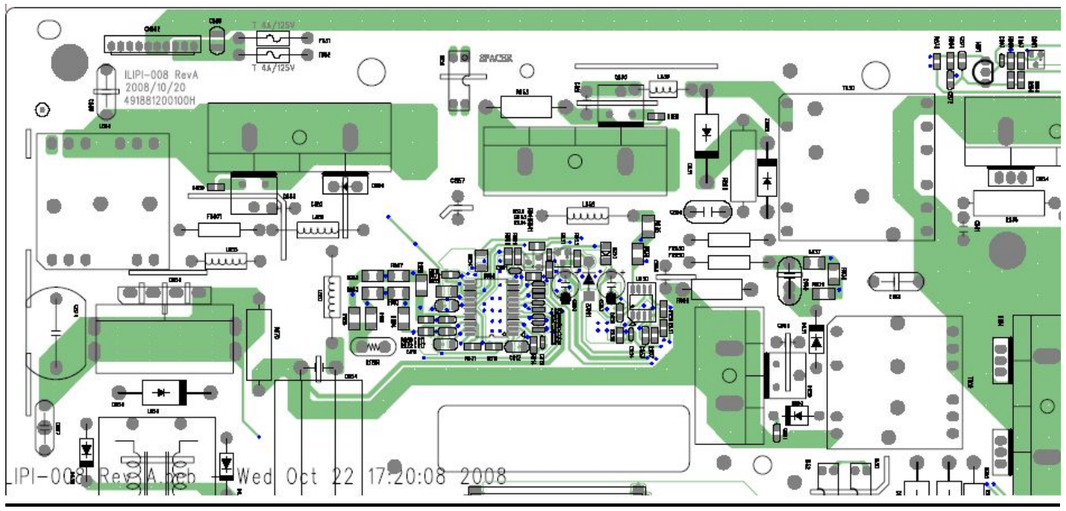
Bottom Layer

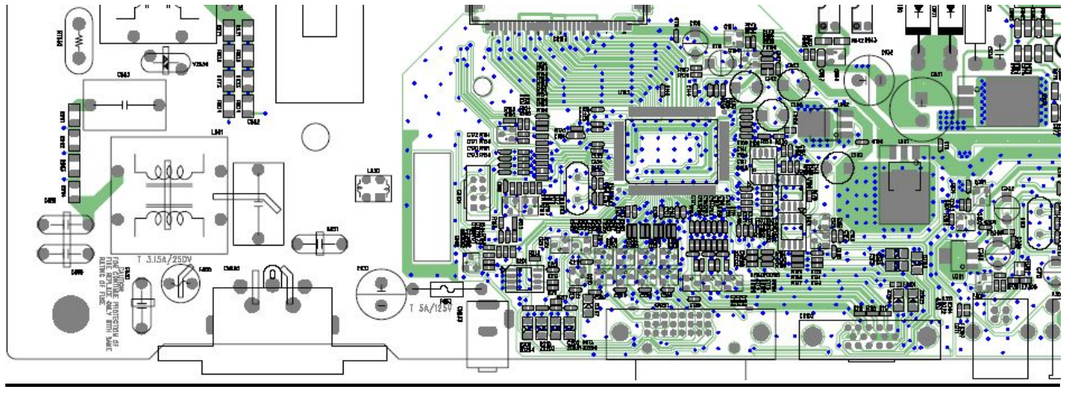
Service Manual



Main board:

Top Layer





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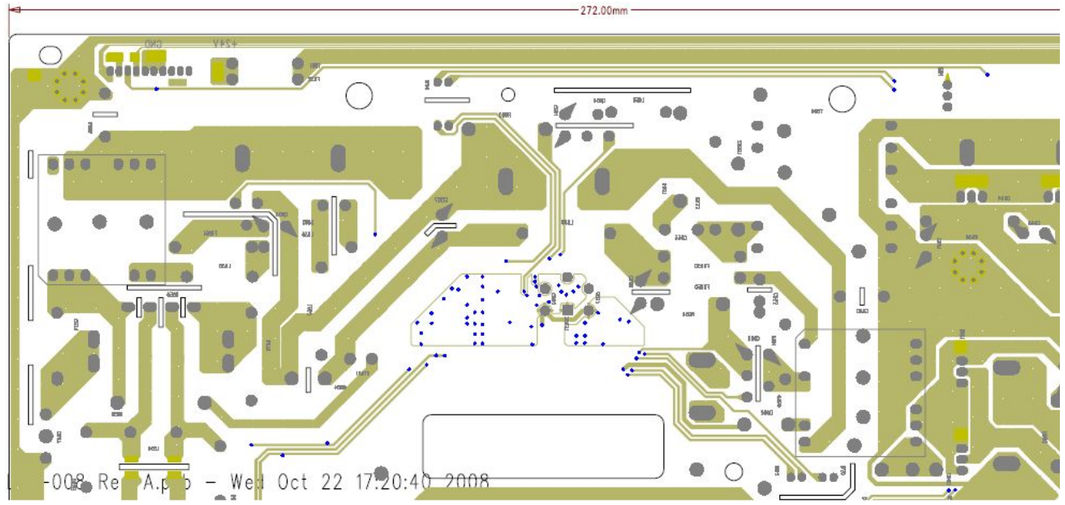
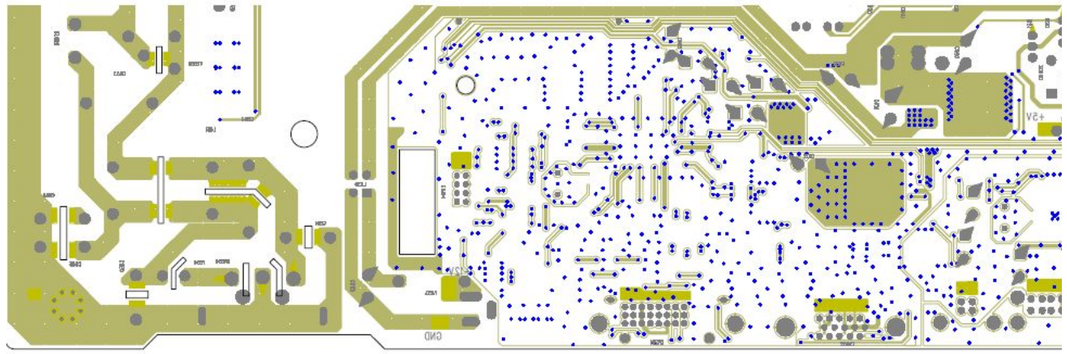
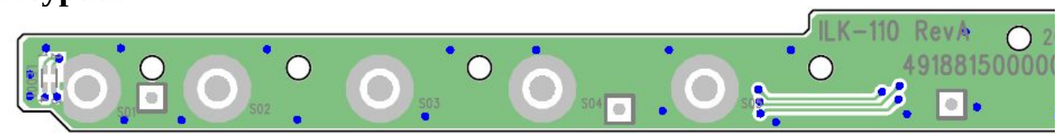
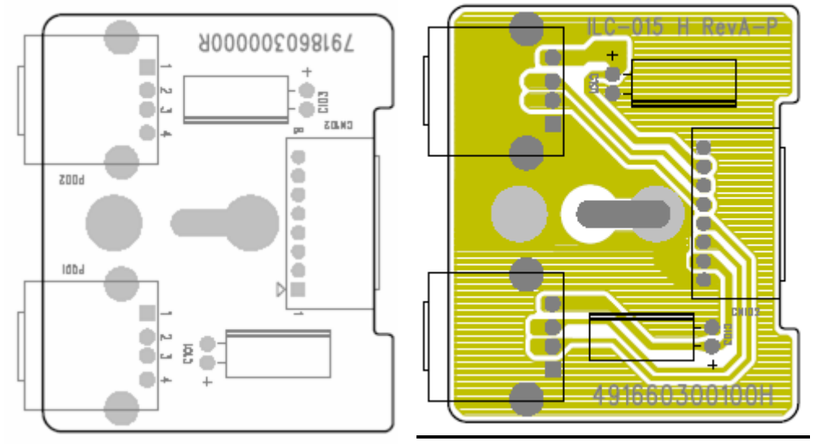




Keypad:



USB convert board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P002
P001
CN02
C003
C001
ILC-015 H RevA-P
4916603001001H